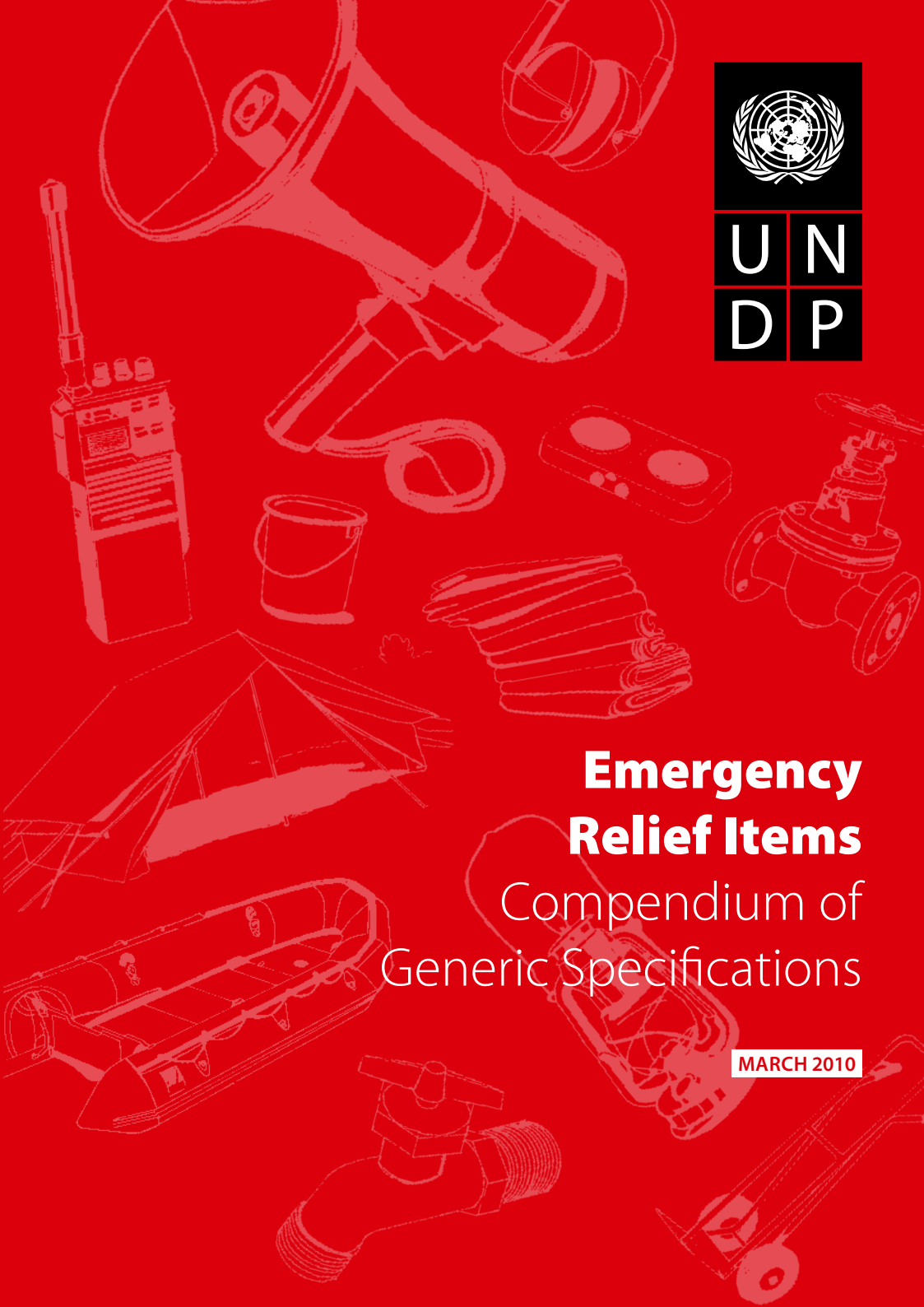

UNDP

Emergency Relief Items

Compendium of Generic Specifications

MARCH 2010

United Nations Development Programme

EMERGENCY RELIEF ITEMS
COMPENDIUM OF GENERIC SPECIFICATIONS

March 2010

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This present edition of the Compendium of Generic Specifications for Emergency Relief Items is a result of an initiative undertaken by UNDP/BOM/PSO/Special Advisory Team for Crises Prevention and Recovery to produce a revised version of the document incorporating updated technical specifications and additional practical information. The compendium has proven to be a useful tool for improved planning, preparedness and delivery of relief assistance in a rapid, concerted and cost-effective manner.

The last version of the Compendium was published in May 2000, as the result of a project conducted by the Inter-Agency Procurement Services Office (UNDP/IAPSO) with the aim of developing generic specifications for emergency relief items that are typically sourced during a disaster/emergency situation.

The updated edition of the Compendium compiles standardized generic technical specifications made available for procurement practitioners for efficient sourcing of emergency goods in crisis situations and early recovery activities.

The objective of this publication is to contribute to enhancing the capacity for immediate crisis response and early recovery and to make the tools and guidelines available to practitioners to facilitate more effective and efficient deployment of goods and services in crisis and/or emergency situations.

The compendium is also intended to encourage the standardization of items in the different categories included. The analysis of the response to a few recent emergency situations discovered that a lot of effort and time are frequently spent in clarification of aspects related to technical specifications of required goods, hampering, therefore an efficient and expeditious response.

The specifications of the items in the Compendium are based on the active involvement and contribution of the Cluster Lead Agencies, which assume overall responsibility for the definition of the specifications. The compendium has been divided in the following chapters:

Chapter		Cluster Lead Agency
1.	IT, Telecommunications & Power Supply	UNOCHA, UNICEF and WFP
2.	Shelter & Housing	UNHCR and IFRC
3.	Water, Sanitation and Hygiene (WASH)	UNICEF
4.	Basic Logistics	WFP
5.	Materials handling	N/A

The compendium lists, for each category, the complete generic specifications for all selected items, together with information on shipping weight/volume. An introduction chapter to every group also highlights general technical information for practitioners. The relevant UNCCS identification number (United Nations Common Coding System) has also been allotted to assist in the interchange of information, statistical reporting and identification of potential vendors in the UNGM. The 'Reference Links' at the end of the compendium provides a quick overview of some additional useful information the users can access from additional resources.

UNDP takes this opportunity to express its gratitude to all cooperating organizations for their continuous support in the revision of this compendium. We trust that it will provide relevant guidance and assistance to the UNDP offices with the planning, preparedness, budgeting and execution of assistance in emergency situations and ER activities involving the acquisition of emergency relief items.

At present, this version of the Compendium is being released in an electronic format with the purpose of keeping it a live document and open for any changes, suggestions and comments. We therefore encourage you to provide us with feedback/comments to improve this product.

The Director
UNDP/BOM/PSO

Chapter 1 TELECOMMUNICATIONS & POWER SUPPLY

General

The success of an emergency relief operation is highly dependent on an efficient communications network. Since the public telecommunications network will, during an emergency situation often be saturated or out of order, the communications network for a relief operation should be based on equipment which is brought into the disaster area and which can work independently of local support. It is therefore extremely important that all the communications equipment to be used in the field is able to operate from a 12 VDC power supply, possibly supported by a solar power system or small portable generating sets (with output 12 VDC) as backup. The different communications systems needed in a disaster relief operation can normally be divided into three categories, each of which requires different kinds of equipment:

Short-Range Communications

Hand-held VHF radio systems are to be used locally within a very limited distance from the base (2-10 KM depending on the terrain).

a) Public Addressing (PA) Equipment

As one-way communications equipment, the hand-held power megaphone can be very useful when a large number of people assembled in a small area need to be informed simultaneously.

b) Hand-held & Base Station VHF Equipment

For short-range communications between individuals in a local area (normally within "line of sight"), and between these individuals and a base, it is essential to have a reliable, foolproof and professional radio-telephone system installed (often called a "walkie-talkie" system). Attention should be paid to the confidentiality/privacy of all communications which are not encrypted.

Medium-Range Communications

Portable and mobile HF radio equipment. VHF equipment with possible use of a repeater station can be used in a regional area. When communications beyond the immediate area around the base is needed, the equipment described above needs to be supplemented with additional equipment. In order to cover a larger region around the base and overcome the "line of sight" limitations for the VHF equipment, it will often be necessary to use VHF repeater station equipment and make use of mobile VHF and HF equipment.

The mobile equipment is often the same as that used at the base station, but with the hardware modified for vehicle installation.

Long-Range Communications

HF radio and satellite equipment for communications with the outside world, HQ etc.

For long-range communications there are basically two different methods to choose from: HF-radio systems or satellite systems. Each method requires completely different types of equipment with advantages and disadvantages as explained below.

a) HF-Radio Systems

HF-radio (shortwave radio) is the traditional method for medium and long-range voice and telegraphic communications. HF SSB communications is more reliable than VHF or UHF communications, especially where mountainous terrain or distances over 14 miles are encountered. HF radio signals (2-30 MHz) may be received at distant locations using either ground wave or sky wave signals. Ground wave signals follow the contour of the ground in hilly regions for 1 to 90 miles, depending on frequency. At distances greater than 50 miles to several thousand miles, sky signals which bounce off the F2 layer of the ionosphere are involved.

While communications within your own network will normally be free of charge, coast or ground stations will charge a fee for handling your traffic. It is advisable to make arrangements with the above for such services.

Apart from the fact that the transmission can sometimes be seriously affected by propagation and interference, the disadvantage of an HF-radio system is the need for a trained technician to install and line up the equipment and antennas. It should also be mentioned that, in some parts of the world, the allocation of HF radio frequencies by authorities can be a rather complicated and time-consuming procedure, and will normally require a trained technician to operate the system.

To select the most suitable antenna system, advice from a qualified technician is strongly recommended and required during the installation process.

The specifications for HF-radio systems have been selected on the basis of long-term experience which various UN agencies and other international relief organizations and embassies have had with this type of equipment. Special consideration has in all cases been given to their reliability and suitability for field use.

b) Satellite Systems

Within the last ten years, long-range telecommunications has been revolutionized through the use of satellite systems, which provide the most reliable, high-quality wireless communications available today.

Systems of special interest for emergency relief operations are those based on the BGAN Standard.

For all kinds of satellite terminals, registration with PTT authorities is required before the terminal can be used. Registration ensures that all communications via the satellite can be invoiced to the owner of the terminal. This is a significant difference and disadvantage of satellite communications when compared to HF-radio. Communications by satellite can be very expensive, the average fee being about five times the cost of HF coast radio services.

* **INMARSAT-B**
  Standard-B terminals provide telephone, telefax, telex, and data transfer up to a speed of 64 kbit/s using digital communications technology.

* **VSAT**
  Very Small Aperture Terminal (VSAT) - VSAT is another satellite based solution. The pricing is usually based on one time installation cost and a fixed monthly recurring cost for service. Hence this solution can be cost effective if the deployment is required for a longer period and higher usage requirements. Due to its relatively small size it is easy to ship and to install, although VSAT terminals can have dish sizes of 1.2 through 7 meters the majority are 1.8 meters.

The specifications selected for satellite terminals take into consideration previous UN experience with this equipment. Also, the following guidelines may be taken into consideration when selecting which communication equipment to use during an emergency.

For Emergency Conditions - short to medium term:

INMARSAT Standard B - voice/data/fax

Radio

For Emergency Conditions - long term:

INMARSAT Standard B (Multiplexed - voice/data/fax)

VSAT - Ku or C Band - voice/data

For Emergencies and True Portability, e.g., communications with projects:

INMARSAT Standard BGAN, Thuraya, Iridium

c) Office in a Box Solution

Once the connectivity to the outside world is established, it is may be necessary to provide small office solution for the staff on location (especially when the VSAT solution is deployed) to provide voice, data, voicemail wireless capabilities to communicate between themselves and rest of the world. The purpose is to quickly and easily establish an IT office which is mobile/portable, preconfigured and ready for immediate deployment. There are appliances such as Cisco Unified Communication 520 that are capable of supporting these requirements.

Power Source

The power source for telecommunications equipment is often one of the following types depending on the location where the systems are operated:

- Battery
- Generating set
- Solar power

The most commonly used source is a battery which can be charged regularly. Power for battery recharging can be drawn from the mains, the engine of a running vehicle or from a gasoline generator.

However, when telecommunications equipment is utilized in emergency situations the regular provision of electric power is uncertain. In such cases, it is better to rely on small self-contained generating sets. Solar energy, also known as photovoltaic, is a mature technology that has already proved its reliability in numerous situations. The capital cost, however, is much higher and requires a skilled technician for maintenance and repairs.

Power Supply

This section has been prepared to facilitate the selection of appropriate power generating equipment suitable for installation as a part of emergency relief operations.

The range of equipment covered essentially addresses the requirements of electric power in an emergency relief camp with about three thousand to four thousand persons housed in approximately 800-1000 temporary shelters.

Camps of approximately the above size are estimated to require about 50-60 kVA to cope with the primary needs of adequate lighting in the community kitchens and security lighting, whilst also allowing some minimal lighting of the shared facilities such as toilets etc., and of the shelters themselves.

Apart from the above, there are perceived some specific power requirements for mobile communications and also for a field office set-up, which are desirable for the effective functioning of the personnel from relief organizations. These aspects are estimated to require approximately 5 kVA for basic office equipment, and a minimum of 0.3 kVA for mobile communications equipment.

It is recommended that when power generating sets of the larger capacities are purchased for emergency relief (i.e. over 45 kVA), these should be obtained along with weather proof or acoustic canopies, as available, to minimize the nuisance from noise, and also to obviate the need for provision of a separate shelter for the power generating equipment itself.

As a rule, the power generating equipment listed in this catalogue will need to be installed and commissioned at emergency sites. Hence, it is unlikely that properly prepared foundations can initially be made available. These are intended for standby duty in more permanent installations.

However, the smallest power generators (below 1.0 kVA) are suitable for use without any special foundations, whereas the larger equipment can be used for several days simply placed on firm and well-leveled ground (which must be able to support the weight of the set).

Basis for estimating power requirements

For the purpose of classification, the power supply equipment is categorized into the three generic types of:

- Power supply for 800-1000 emergency relief shelters
- Power supply for a field office of the relief agency
- Power supply for mobile communications

The power requirements for each of the above are arrived at as follows:

(i) Lighting for 800-1000 temporary shelters
(an average lighting of 20-30 watts in each shelter)

to house 3000-4000 persons ..... (approx) 20 kW

Security lights for camp as above..... 15-20 kW

Lighting/power for community kitchens, first-aid rooms, toilets 15-20 kW

(ii) Lighting/power for a field office equipped with:

Appliance	Approx. power requirements (kW)
Computer (personal)	0.3-0.5
Computer (laser printer)	1.0
Lights (bulbs)	0.03-0.1
Lights (fluorescent tubes)	0.02-0.1
Lights (security, halogen)	0.1-0.5
Photocopier (desktop)	1.0-2.0
Typewriter/Word processor	0.2-0.4

(iii) Mobile communications systems of A, C and M types are currently supplied with a power requirement ranging between 120 watts and 250 watts.

Spare Parts

It is recommended that spare parts packs be ordered together with the equipment (for regions with poor or non-existing local services).

Some notes on installation

Advance planning and installation work is desirable before arrival of the larger power generators at site.

Some aspects to be considered in planning installations at emergency relief sites include:

a) Generator Location

The larger generators are supplied with anti-vibration mounts and on a fabricated skid base, which allows the equipment to be installed for temporary use without elaborate foundations.

However, it is important to ensure that the area of installation is on a firm and hard ground surface, which must be carefully checked and leveled. Any irregularities which can lead to

unbalanced seating of the set on its base must be completely eliminated, and full and secure seating confirmed before starting up of the equipment.

b) Foundations

Though, the power generating sets may be used temporarily as above, without specially constructed foundations. It is important that proper foundations are prepared according to the manufacturer's specifications as soon as possible.

Handheld satellite terminal Thuraya 2510

Shipping weight: **0.680 kg**
Shipping volume: **0.005 m³**
UNCCS Code: **467400**

General Description:
Handheld Thuraya terminal for voice, SMS and low speed data.

Technical Specifications:
- Portable Thuraya terminal with an easy-to-use interface and favorable dimensions for handheld and mobile operations; satellite only, built-in GPS receiver
- Proprietary interface for USB connection to PC
- 9.6 kbps switched circuit, 60/15 kbps GPRS, 160 character SMS
- Battery life time; 40h standby, 2.4h at typical use

Supplied with:
- Thuraya handheld terminal, Li-Ion battery, SIM card, earset, USB data cable, standard AC/DC PSU (dual AC voltage 110/220 travel charger) w/EUR 2-pin plug and multi-use adapter, car charger/ cigarette lighter adapter (dual DC voltage 12/24V), CD-ROM with terminal manuals, software and drivers, hardcopy quick start guide.

Transport and Storage:
- Cold chain: No
- Dangerous good: No. May require import license and frequency licensing in certain countries
- Packaging: Cardboard box, 0.680 kg, 0.005 m³.
- Estimated dimensions: (Terminal only): 118 x 53 x 19 mm

Instruction for use (prescription, quantity per person, etc.):
- Small size Thuraya handheld terminal with an easy-to-use interface and a favorable size for hand-carry and portable operations. Can also be used for small office satellite phone connectivity with the appropriate docking station.
- Requires an activation of a SIM card to access the Thuraya network.
- Users are encouraged to get acquainted with airtime rates and monthly recurrent charges.

BGAN Terminal
Thrane & Thrane Explorer 500

Shipping weight:	**0.5 kg**
Shipping volume:	**0.012 m³**
UNCCS Code:	**467400**

General Description:
Portable BGAN terminal for voice, data, fax and SMS services.

Technical Specifications:
- Medium size BGAN terminal with an easy-to-use interface and a favorable size for hand-carry, portable and small-office operations.
- RJ-11 and Bluetooth interfaces for voice handsets, Ethernet and USB interfaces for PC, Bluetooth interface for particular external devices.
- 464/448 kbps background IP, 32/64/128 kbps streaming, 160 character SMS.
- Battery life time; 36h standby, 2.25h when used at 128 kbps.
- IP-54 ingress protection.

Supplied with:
- Thrane & Thrane Explorer 500 terminal, battery, soft carry case, SIM-card, Explorer 2-wire analog voice handset, 2 m USB cable, 2 m Ethernet cable, CD with drivers, terminal manuals and BGAN Launch Pad, standard AC/DC power supply (dual AC voltage w/2-pin EU plug), car charger (cigarette lighter type), 14. VDC voltage limiter, international power adapter set.

Transport and Storage:
- Cold chain: No
- Dangerous good: No. May require import license and frequency licensing in certain countries
- Packaging: Cardboard box, 0.5 kg, 0.012 m³
- Estimated dimensions: (Terminal only): 218 x 217 x 52 mm

Instruction for use (prescription, quantity per person, etc.):
- Requires an activation of a SIM card to access the BGAN network.
- Long term usage will incur relatively high airtime charges, users is urged to get acquainted with airtime rates and monthly recurrent charges.

Precondition for utilization:
- Users require basic training prior to having the BGAN terminal assigned.

Alternative if the item is not available:
- BGAN Terminal, Thrane & Thrane Explorer 700

Complementary Requirements, to be ordered/procured separately:
- Portable Solar Charger, 30 W

Emergency scenarios
All emergencies and security environments.

Context in which item is mainly used (e.g. reinforce national system/structures, refugee camps, etc.):
Any operation where portable solutions for data and voice applications are required. The terminal can also be used as an office back-up connectivity and disaster recovery asset.

Country considerations:
The use of satellite equipment might be sensitive due to several reasons in certain countries. Licensing for equipment import and use of satellite frequencies may be required in certain countries.

BGAN Terminal
Thrane & Thrane Explorer 700

Shipping weight: **7 kg**
Shipping volume: **0.012 m³**
UNCCS Code: **467400**

General Description:
Portable BGAN terminal for voice, data, fax and SMS services.

Technical Specifications:
- Large size BGAN terminal with an easy-to-use interface for portable and medium-office operations.
- 2 x RJ-11 and Bluetooth interfaces for voice handsets, 2 x Ethernet and USB interfaces for PC, Bluetooth interface for particular external devices, WLAN (802.11 b/g) or wireless connections.
- 492/492 kbps background IP, 32/64/128/256 kbps streaming, 2 x 64 kbps ISDN, 160 character SMS.
- Separable transceiver/modem unit and antenna can be extended up till 70 m with manufacturer approved coaxial cable.
- Battery life time; 36 h standby, 2.25 h when used at 144 kbps constant transmit.
- IP-52 (transceiver/modem unit) and IP-66 (antenna) ingress protection.

Supplied with:
- Thrane & Thrane Explorer 700 terminal w/modem and antenna units, antenna cable 41.5 cm, antenna cable 10 meter, Explorer 2-wire voice handset, battery, SIM-card, USB cable 2 meter, 100-240VAC, 47-63 Hz adapter with Europlug (EN 50075 standard), car charger, soft carry case, Instruction kit with CD-ROM.

Transport and Storage:
- Cold chain: No
- Dangerous good: No. May require import license and frequency licensing in certain countries
- Packaging: Cardboard box, 7 kg, 0.012 m³.
- Estimated dimensions: (Terminal only): 399 x 297 x 51 mm

Alternative if the item is not available:
- BGAN Terminal, Thrane & Thrane Explorer 500

Complementary Requirements, to be ordered/procured separately:
- Portable Solar Charger, 62W

Emergency scenarios:
Type of emergency: All emergencies and security environments

Context in which item is mainly used (e.g. reinforce national system/structures, refugee camps, etc.):
Any operation where portable solutions for data and voice applications are required. The terminal can also be used as an office back-up connectivity and disaster recovery asset.

Country considerations:
The use of satellite equipment might be sensitive due to several reasons in certain countries. Licensing for equipment import and use of satellite frequencies may be required in certain countries.

GPS receiver, basic
Garmin GPS60

Shipping weight: **0.153 kg**
Shipping volume: **0.31 m³**
UNCCS Code: **467465**

General Description:
Basic GPS receiver. The Garmin GPS60 is a non-mapping waterproof, rugged basic GPS receiver.
Note: This GPS receiver does not have the capacity of loading electronic map data.

Technical Specifications:
- The Garmin GPS60 (Garmin part number: 010-00322-01) is a basic GPS receiver suitable for field operations. It has capacity to store up to 500 waypoints/icons, with name and graphic symbols and 50 reversible routes with up to 250 points each.
- Receiver: 12 parallel channel GPS receiver continuously tracks and uses up to 12 satellites.
- Acquisition times: Warm: Approximately 15 seconds, Cold: Approximately 45 seconds.
- Accuracy: <15 meters, 95% typical. Velocity: 0.05 meter/sec steady state.
- Interfaces: USB, RS232 (serial).
- Antenna: Built-in quadrifilar, with external antenna connection (MCX).
- Power: 2 AA batteries (not included). Battery life: Up to 28 hours.
- Display: 38 mm x 56 mm, high-resolution, FSTN (160 x 240 pixels).
- Case: Waterproof to IEC 60529 IPX7 standards.
- Temperature range: 5ºF to 158ºF (-15°C to 70°C).

Supplied with(Standard configuration includes):
- PC/USB interface cable
- Wrist strap
- Belt clip with button
- Quick start guide
- Owner's manual

Accessories/Spare parts/Consumables:
- For use in vehicle, the optional (Garmin Part No: 010-10702-00), external GPS antenna is highly recommended. The antenna has integrated magnetic mount, 2.5 m cable, and MCX antenna connector. Size: 7 cm L x 5.1 cm W x 1.9 H.

Weight/Volume/Dimensions:
- estimated weight: 0.153 kg
- estimated volume: 0.31 cdm
- estimated dimensions: 155 x 61 x 33 mm

Comments:
This basic model is not capable of uploading electronic map information.
If this is required the advanced GPS receiver should be chosen instead.

GPS receiver, advanced

Shipping weight: **0.5 kg**
Shipping volume: **0.005 m³**
UNCCS Code: **467465**

General Description:
Advanced GPS receiver with large color display, mapping capabilities, internal memory, capacity for upload of mapping software and connector for optional external antenna. It is highly recommended to order with the optional MapSource WorldMap CD for full mapping capacity.

Technical Specifications:
- GPS receiver with: 64 MB microSD card, belt clip, USB interface cable, mapSource Trip & Waypoint Manager CD, lanyard, owner's manual, quick-start guide
- Supports English, Spanish, Portuguese, and French
- Big 256-color screen (160-240 pixels), built-in map covering Europe, extreme western Russia, Africa, and the Middle East, and covers an area from N75 to S60 Latitude, W30 to E60 Longitude. Also included is a high-level worldwide map with political boundaries and major cities.
- Internal memory is preloaded with a marine point database
- Waypoints, routes, automatic tracking logs, built-in sun/moon calculations
- USB connection to PC, microSD card, runs on two AA batteries (not included), battery life typically 18 hours up to 30 hours with battery saving enabled, waterproof case
- Operating temperature range -15ºC to 70ºC

Transport and storage:
- Cold chain: No
- Dangerous good: No. Regulated, requires import license and frequency licensing in most countries.
- Packaging: Cardboard box, 0.5 kg, 0.005 m³

Instruction for use (prescription, quantity per person, etc.):
- Standard GPS receiver used in routine and emergency operations for the purpose of navigation, coordinates plotting, waypoint/route logging and location reporting.

VHF portable radio kit Motorola GP360

Shipping weight: **5.45 kg**
Shipping Volume: **0.02 m³**
UNCCS Code: **467652**

General Description:
Complete VHF mobile station kit, 25 Watt, 255 channels, consisting of Motorola GM360, with fixed mount 5/8 wavelength mobile antenna, cables and microphone.

Technical Specifications:
- Advanced VHF (146-174 MHz) mobile radio.
- Internal loudspeaker.
- Up to 255 channels, 25 watt output, (programmable 1-25W).
- 7 programmable buttons, 3 status LEDs.
- Programmable channel spacing (12.5-25kHz).
- Display with 4 lines/14 character.
- Voice storage function (voice mail) and scanning.
- Select V (Select 5) signaling.

Supplied with:
- MDM25KHF9AN5_E: Motorola GM360 mobile, select 5, VHF (136-174 MHz), 1-25W, 255 channels.
- MH 3-ZP4R/BNC: 5/8lmb mobile antenna w/stainless steel whip, 4m coax cable and Z-Mount with BNC.
- VHF mobile radio kit; radio w/display and full keypad microphone, battery cables, fuse, mounting bracket, fixed roof mount antenna, antenna cable.
- Motorola Select V signaling, selective calling, emergency calling, stun/un-stun, silent interrogate, lone worker, emergency exit, phone patch, whisper mode 136-174 MHz, 25W, 255 channels, narrow band FM

Transport and storage:
- Cold chain: No
- Dangerous good: No. Regulated, requires import license and frequency licensing in most countries.
- Packaging: Cardboard box, 5.45 kg, 0.02 m³

Instruction for use (prescription, quantity per person, etc.):
- Mobile VHF radio used in standard UN HF networks on simplex and duplex (repeater) channels
- Always inform operating frequency when ordering radio equipment.

Precondition for utilization:
- Users require basic training prior to operating the mobile radio

Alternative if the item is not available:
- VHF mobile radio kit - Motorola GM380

Emergency scenarios
All emergencies and security environments

Context in which item is mainly used (e.g. reinforce national system/structures, refugee camps, etc.):
Areas with security phase I or higher require independent UN radio networks. From security phase III, permanently installed radio is mandatory in all vehicles. VHF radio networks also provide operational support where no other infrastructure exists.

Country considerations:
The use of radio equipment might be sensitive due to several reasons in certain countries. Licensing for import and use of radio frequencies is required in most countries.

Handheld satellite terminal Iridium 9555

Shipping weight: **266 g**
Shipping Volume: **0.005 m³**
UNCCS Code: **467400**

General Description:
Handheld Iridium terminal for voice, SMS and low speed data.

Specifications:
- Dimensions: 143 mm (L) x 55 mm (W) x 30 mm (D)
- Weight: 266 g (9.4 oz)

Duration:
- Standby time: Up to 30 hours
- Talk time: Up to 4 hours

Display:
- 200 character illuminated graphic display
- Volume, signal and battery strength meters
- Illuminated weather-resistant keypad

Calling Features:
- Integrated speakerphone
- Quick-connect to Iridium voicemail
- Two-way SMS and short email capability
- Pre-programmable International Access Code (00 or +)
- Mailbox for voice, numeric & text messages
- Selectable ring and alert tones (8 choices)

Memory:
- 100 entry internal address book, with capacity for multiple phone numbers, email addresses and notes
- SIM-based address book with 155 entry capacity
- Call history retains received, missed and dialed calls

Usage Control Feature
- User-configurable call timers to manage costs
- Keypad lock and PIN lock for additional security

Additional Accessories include
- Ac charger
- International plug kit
- DC travel charger
- Hands-free headset
- Holster
- Quick start guide
- Auxiliary antenna
- Auxiliary antenna adapter

Instruction for use (prescription, quantity per person, etc.):
- Small size Iridium handheld terminal with an easy-to-use interface and a favorable size for hand-carry and portable operations. Can also be used for small office satellite phone connectivity with the appropriate docking station.
- Requires an activation of a SIM card to access the Iridium network.
- Users are encouraged to get acquainted with airtime rates and monthly recurrent charges.

Handheld satellite terminal Iridium 9555

Contd...

Precondition for utilization:

- Users require basic training prior to having the Iridium handheld terminal assigned.

Emergency scenarios:

- All emergencies and security environments.

Context in which item is mainly used (e.g. reinforce national system/structures, refugee camps, etc.):

Any operation where portable solutions for satellite voice applications are required. The terminal can also be used as an office voice back-up connectivity and disaster recovery asset.

Note: Iridium has true global coverage.

Country considerations:

The use of satellite phone equipment might be sensitive due to several reasons in certain countries. Licensing for import and use may be required.

HF radio base kit
Codan NGT-SRx

Shipping weight: **6.6 kg**
Shipping Volume: **0.2 m³**
UNCCS Code: **472131**

General Description:
Standard HF base station radio for use in standard UN HF networks

Technical Specifications:
- HF base station radio kit; radio w/handset, RF unit, PSU, power cables w/fuse, desk console, base antenna, coaxial cable, lightening arrestor
- Standard 4/6-digit selective calling, emergency calling, GPS enabled, ALE/CALM, optional telephone interconnect 1.6-30 MHz, 125W PEP, 400 channels, USB/LSB, AM, AFSK, scanning
- Data ready with additional cooling fans for interconnect with Codan data modem

Transport and storage:
- Cold chain: No
- Dangerous good: No. Regulated, requires import license and frequency licensing in most countries.
- Packaging: Cardboard box, 6.6 kg, 0.2 m³

Instruction for use (prescription, quantity per person, etc.):
- Base station HF radio used in standard UN HF networks on simplex channels

Precondition for utilization:
- Users require basic training prior to operating the base station radio

Emergency scenarios:
All emergencies and security environments

Context in which item is mainly used (e.g. reinforce national system/structures, refugee camps, etc.):
Areas with security phase I or higher require independent UN radio networks. From security phase I, permanently installed radio is mandatory in at least common services radio rooms. VHF radio networks also provide operational support where no other infrastructure exists.

Country considerations:
The use of radio equipment might be sensitive due to several reasons in certain countries. Licensing for import and use of radio frequencies is required in most countries.

Cisco UC 520 W series Model
Part no. UC520W-16U-4FXO-K9

Shipping weight:	**6.6 kg**
Shipping Volume:	**0.2 m^3**
UNCCS Code:	**721100**

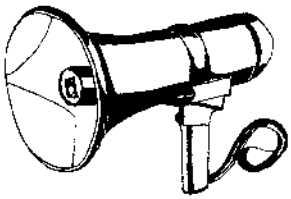
General Description:
The UC 520 is an all-in-one, simple, smart, and affordable unified communications solution designed. Each configuration of the UC 520 is tied to a maximum number of supported users and includes relevant licenses for call control, voice messaging, and Cisco Unified IP Phones.

The UC 520 consists of these two platforms:
- 8- and 16-user platform

The 8- and 16-user platform includes 8 switched Power-over-Ethernet (PoE) ports, 4 foreign exchange stations (FXS) ports, 4 foreign exchange office (FXO) or 2 ISDN BRI ports for international deployments, voice messaging, automated attendant, music-on-hold (MoH) audio port, a WAN Ethernet uplink port, an Ethernet expansion port, and a console/aux port.

Megaphone, hand-grip type

Shipping weight: **1 kg**
Shipping volume: **0.03 m³**
UNCCS Code: **472341**



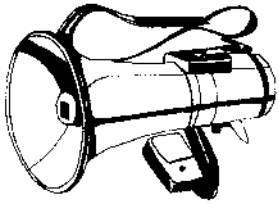
Type:
- Handheld with built-in microphone volume control and alarm switch in handgrip.
- Suited for small group of people (20-30 persons).

Technical Specifications:
- Audible Range: City areas - 250 m (min). Suburban - 800 m (min).
- Output power: 6-10 W.
- Power source: 12 VDC.

Accessories required:
- Batteries, size "AA", 8 pieces.

Megaphone, shoulder type

Shipping weight: **1.5 kg**
Shipping volume: **0.04 m³**
UNCCS Code: **472342**



Type:

- External input connection to microphone, tape recorder or recorder or record player.
- Handheld microphone with on/off switch and built-in volume control.

Technical Specifications:

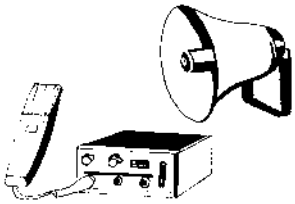
- Audible range: City areas - 400 m (min). Suburban - 1.3 km (min).
- Output power: 10 - 16 w.
- Power source: 12 VDC.

Accessories required:

- Batteries, size "C", 8 pieces.

Public Address (PA) Set, Mobile

Shipping weight: **3.5 kg**
Shipping volume: **0.1 m³**
UNCCS Code: **472352**



Type:

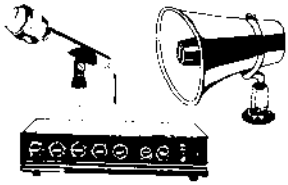
- Mobile (vehicle mounted) PA - amplifier with hand-held microphone and two horn speakers for outside vehicle mounting, including cables.

Technical Specifications:

- Output power: 10 - 15 W or 20 - 30 W
- Power source: 12 VDC

Public Address (PA) set fixed installation

Shipping weight: **20 kg**
Shipping volume: **0.3 m³**
UNCCS Code: **472353**



Type:

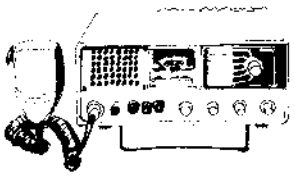
- Desktop PA-amplifier with connections for microphone, speakers, tape recorders or record player. Suited for indoor or outdoor groups of people up to approx. 750 persons.

Technical Specifications:

- Output power: Minimum 60 W (Rated.)
- Power supply: 110/220 VAC 50/60 Hz and 24 VDC (battery operation).
- Speakers: Minimum two pieces directional reflex horns with driver units and extension cables.
- Microphone: Dynamic type microphone with extension cables.

Transceiver-Radio Voice System

Shipping weight: **Approx. 10 kg**
Shipping volume: **Approx. 290 x 110 x 360 m**
UNCCS Code: **467654 (a)**



Type:
- Light weight base station of rugged construction.

Technical Specifications:

• Input power:	10 - 16 VDC, standby consumption to be lower than 1A at 12 V.	
• Frequency range:	1.6 to 30 MHz (receive and transmit).	
• Operating range:	-30°C to +55°C, up to 90% humidity.	
• Frequency control:	400 channels	
• Modes of operation:	Transmit and receive:	J3E (USB and LSB).
• Transmitter:	Output power:	100 W pep minimum in SSB.
• Receiver:	Sensitivity:	Better than 0.12 µV for 10 dB sinadin SSB.
	Selectivity:	2.3 kHz/-6 dB (SSB).
	Image rejection:	76 dB or better.
	Clarifier:	With central detent, approx. ±150 Hz.

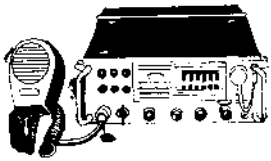
Additional features:
- Programmable scanning facility for all channels.
- Protection against inversion of polarity.
- Protection against over tension.
- Automatic fuses or easily accessible interchangeable fuses with spare fuses delivered as part of a standard package.
- Automatic antenna tuner (Integrated or external).

Optional features:
- Selcall (protocol to be compatible).

HF base station antenna:
- See antenna systems for HF radio communications.

Transceiver, Transportable

Shipping weight: **Approx. 4 kg**
Shipping volume: **Approx. 250 x 320 x 80 mm**
UNCCS Code: **467655 (a)**



TRANSCEIVER

Type:

- Solid state HF transceiver of rugged construction. Synthesized, programmable with built-in receiver scanning facility.

Technical Specifications:

- Frequency range:
  2-30 MHz (min) - base station.
  2-30 MHz (min) - mobile station.
- Receiver selectivity: Greater than 70 dB at -1 kHz and +5 kHz.
- Channels: 400 front-panel programmable channels.
- Mode of operation: J3E (USB and LSB).
- Operating range: -30 to +60 °C at 90% humidity.
- Transmission Output: 100 W pep.
- Power requirements: 10-15 VDC, reverse polarity and overvoltage protection.

Options:

- Selcall (Protocol to be compatible).
- Extended control head with mounting.
- Bracket for vehicle installation.

HF VEHICLE ANTENNA

Shipping weight: Approx. 5.8 kg
Shipping volume: Approx. 1.5 x .15 x .15 m

Technical Specifications:

- Input power: 12v supplied from transceiver
- Frequency range: 2 to 30 MHz (receives and transmits).
- Operating range: -40°C to +60°C.
- Power rating: 125watts PEP
- Modes of operation: Transmit and receive: J3E (USB and LSB).

Frequency range:

- To cover the range in operation.

Sturdy construction to withstand rough road driving, automatically tuned and complete with installation hardware (must be waterproof, i.e. unaffected by river fords).

Broadband Antenna

Shipping weight: **Approx. 20 kg**
Shipping volume: **Approx. 0.16 m³**
UNCCS Code: **475431**

Area of use:

- For medium-range point to point and base to mobile communication. The advantage is that it can be used with natural available support systems such as buildings, high trees and free-standing masts. It is relatively simple and easy to erect and does not require an antenna tuner.

Type:

- Broadband antenna.

Typical kit:

- 1 Antenna.
- 1 Roll of 100 m nylon rope, Ø 5 mm.
- 2 Mast holders.
- 2 Wire holders.
- 4 Rawl plugs with hook screw.
- 50 Union screws.
- 8 Turn buckles.
- 20 Protective rings.
- 8 D shackles.
- 5 complete rawl plugs.
- 30 m Coaxial cable RG-213
- 1 Lightning arrestor
- 1 Installation manual.

Note:

For temporary installations where available support structures can be used, the above mentioned kit could be reduced to consist of only a few necessities such as nylon rope, some 30 to 50 meters of RG-213 coaxial cable with connectors on both ends and a handful of tye-raps.

Automatic Antenna Tuner

Shipping weight: **Approx. 5 kg**
Shipping volume: **Approx. 0.02 m³**
UNCCS Code: **475434 (a)**

Area of use:
- Necessary when a delta-loop antenna is used.

Frequency range:
- 2-30 MHz.

Power capability:
- 150 W pep.

Input impedance:
- 50 Ohms.

Tune-up power:
- 5-15 W

Tune-up time:
- 1-2 sec.

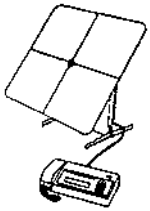
Power supply:
- 12 VDC operation (from transceiver).

Construction:
- Weatherproof enclosure.

Accessories:
- 30 m control cable.

Inmarsat Standard B

Shipping weight: **Approx. 25 kg**
Shipping volume: **Approx. 0.1 m³**
UNCCS Code: **467432**



Areas of use:

- An office installed Inmarsat Standard B to provide voice, telex, telefax and data between the terminal and the international telecommunication networks.

To Include:

- Inmarsat B transceiver with built-in control keyboard, built-in control display and telephone handset.
- Built-in telex or lap-top with printer and software used as telex.
- Parabolic dish antenna with wall brackets, visual and/or acoustic signal strength indicator (to facilitate positioning of antenna).
- Operating and service manual, dual identity number.
- Power cable, min. 5 mtrs extension low-loss antenna cable and interconnecting cables.
- DC/AC 12/220 V inverter (inverting output rating: sufficient to power the STD B terminal and a connected fax machine).

Standard channels:

- Telex: 50 baud 66 word per minute.
- Voice: 16 kbits/s with voice coding.
- Fax: 9.6 kbits/s, CCITT G3 standard.
- Data: 9.6 kbits/s.
- HSD: Simplex 56 or 64 kbits/s.

Options:

- Duplex HSD transfer both 56 and 64 kbit/s.

Interfaces:

- RJ 11 for connecting a second telephone or a fax.
- RS 232 Hayes compatible, for connecting modem, printer or lap-top computer.

Environment:

- Operating temperature: Antenna -25º to +55º C.
- Electronic 0º to +45º C.
- Relative humidity: Antenna 95 % at 40º C.
- Electronics 85 % at 40º C.
- Antenna and outdoor unit must be weather proof.

Power supply:

- 90-240 Vac, 50-60 Hz single phase

Accessories:

- 10-150 meters extension low-loss antenna cable
- Lap-top computer
- Printer
- Fax machine

VSAT

Shipping weight: **Approx. 25 kg**
Shipping volume: **Approx. 0.1 m³**
UNCCS Code: **467433**

Type:

- VSAT Very Small Aperture Terminal which refers to receive/transmit terminals installed at dispersed sites connecting to a central hub via satellite using small diameter antenna dishes.

Area of use:

- Used for the reliable transmission of data, video or voice via satellite. Specialist staff are not required, it simply plugs into existing terminal equipment. These new smaller dishes are capable of sending and receiving signals from geostationary satellite while offering major advantages such as cost savings, portability and easy installation in various types of terrain.

Size:

- 0.9-1.8 meters.

Note:

- The VSAT equipment consists of two units: one outdoor unit (consisting of a small antenna for receiving and transmitting signals) which is placed in the line of sight to the satellite and one indoor unit (consisting of a small desktop box containing receiver and transmitter boards) to interface with the users communications device.

Solar Power Supply Kit

Shipping weight: **Approx. 8-16 kg**
Shipping volume: **Approx. 0.1-0.2 m²**
UNCCS Code: **466541**

Charge Controller
The controller is a 12 or 24 volt series controller for medium sized PV systems. It will control up to 400 peak Watts of PV modules configured for 12 volt operation, 800 peak watts for 24 Volt systems. This controller is used in conjunction with a detached meter unit featuring a digital display (12V systems only), array current; load current and battery voltage are selectable by a rotary switch.

Auto-sensing temperature sensor is fitted as standard.

Regulator also allows for field-adjustable battery selection for sealed or vented batteries.
- Operating temperature range: 0 to 45°C
- Maximum voltage: 40V (Battery)* 50V (Array) *For 6 or 12 lead acid cells only
- Current consumption: @12V<30 mA @24V<22 mA

Typical average values, both rely on:

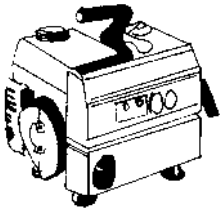
Regulator circuit:
- Max continuous charging current 30A

Load circuit:
- Current peak (1 sec): 45 A
- Max continuous load current 20 A
- Max load current (<5 min) 30 A
- Voltage drop at 30 Amps (load)<.6V
- Low voltage disconnect: 1.9V/cell

Modules
- All modules have tempered glass front, polymer back sheet, EVA encapsulant and anodized aluminum frame. Meet or exceed IEC 61215.
- 50 peak Watts, 36 crystalline cells.
- PV Array
- Consisting of PV modules, mounting structure, interconnect cables, array cable, array input plug and strain relief cable clip.
- Structure
- Transportable/Stationary
- Anodized aluminium with galvanized iron feet for ground or roof mounting. Tilt angle adjustable 15-65 degrees in standard configuration.
- Battery Box
- Transportable/Stationary
- Standard supply is a reinforced plastic box, size 600 mm x 400 mm x 410 mm. Fitted with lid, prewired controller, array, load, meter sockets and battery cables.
- Battery
- Standard supply is 2 units per Power Pack
- For the transportable power packs valve
- Regulated (sealed) lead-acid types are used.
- Volts Ah Wt (kgs)
  12 115 40

Portable Generators, 0.5 kVA

Shipping weight: **Approx. 20 kg**
Shipping volume: **Approx. 0.05 m³**
UNCCS Code: **461141**



Area of use:
- For use as a power supply for mobile field communication equipment

Type:
- Portable petrol power generator

Principal Particulars:
- Rated Power: 0.5 kVA
- Voltage: 220 V *[120 V]* 1 phase
- Output: 1.3-3 A *[2.3-5.2 A]*
- Speed: 3000 rpm *[3600 rpm]*
- Frequency: 50 Hz *[60 Hz]*

Engine:
- Petrol, 4 stroke cycle
- 1 cylinder
- Forced Air Cooling by flywheel-mounted fan
- Hand start
- Fuel consumption: approx. 0.25-0.6 litres/hour
- Output: 0.65-1.1 kW at 3000 rpm
- Fuel tank: 1-3 litres (to last 4-5 hrs at approx. full power & output)

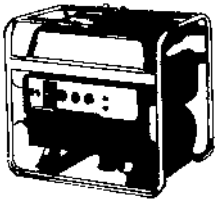
Alternator:
Output: 0.5 kVA at 3000 rpm
- 220 volts-50 Hz *[120 V-60 Hz]*
- Construction to IP 23 or equivalent

Features:
- 2 - power outlets
- Quiet operation
- Easy starting
- Petrol level indicator
- Automatic power regulator

Standard Accessories:
- Battery charger, output: 12V, 72W
- Tool kit for routine maintenance
- Operation manuals
- Oil, air and fuel filters

Diesel Generating Sets, 5 kVA

Shipping weight: **Approx. 180 kg**
Shipping volume: **Approx. 0.5 m³**
UNCCS Code: **461131/461132**



Principal particulars:

Rated Power:	5 kVA
Power Factor:	0.8
Voltage:	220/380 V *[120/210 V]* 3 phase
Output:	8 A [14 A]
Speed:	1500 rpm *[1800 rpm]*
Frequency:	50 Hz *[60 Hz]*

Engine:

- Diesel, 4 stroke cycle
- Direct injection
- Naturally aspirated
- 1 cylinder
- Forced Air Cooling by flywheel mounted/separate Fan or Water Cooling by Radiator and Fan
- Electric/Hand start
- Mechanical governor

  Output: 4.5 kW at 1500 rpm

Alternator:

Output: 5 kVA at 1500 rpm

- Insulation to class H
- To IEC 34.1, VDE 0530, BS 5000 part 3, UTE 5100, NEMA MGI 22, CSA 22.2, AS 1359
- Self regulating, 4 pole, single bearing type
- Fabricated steel shell with drip proof air ducts to IP23

General:

- Engine close coupled to alternator
- Mounted on anti-vibration mounts on fabricated skid base
- fuel tank mounted on engine or incorporated into base
- Lifting points for handling

Control Panel:

Panel fitted on the set including:

- 3 x Ammeter, Voltmeter with switch, Hour meter and Frequency meter
- 1 x 380/3/50 *[210/3/60]* outlet socket (CEE type) c/w circuit breaker
- 1 x 220/1/50 *[120/1/60]* outlet socket (CEE type) c/w circuit breaker

Standard Accessories:

- Automatic shutdown on low oil pressure or high engine temperature when ordered with electric start option
- Low resistance earth rod with 4 m cable
- 1 x 25 m supply cable with plug (H07) suitable for sockets supplied
- Engine makers' tool kit
- Operator manuals
- Oil, air and fuel filters
- Engine mounted exhaust silencer

Diesel Generating Sets, 5 kVA

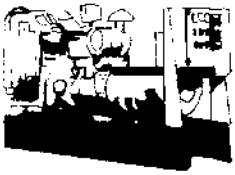
Contd...

Spares and optional extras:

- Spare parts (500 h)
- Wheeled trolley kit
- Electric starting system with battery
- Acoustic canopy
- Engine instruments:
  - Temperature
  - Oil pressure
  - Battery ammeter

Diesel Generating Sets, 60 kVA

Shipping weight: **Approx. 1000 kg**
Shipping volume: **Approx. 3 m³**
UNCCS Code: **461133**



Principal particulars:

- **Rated Power:** 60 kVA continuous (10% overload for 1 hour in 12)
- **Power factor:** 0.8
- **Voltage:** 380V/220V *[210/120V]* 3 phase
- **Output:** 90 A
- **Speed:** 1500 *[1800]* rpm
- **Frequency:** 50 Hz *[60 Hz]*

Engine:

- Diesel, 4 stroke cycle
- Direct injection
- Turbo charged
- 4 or 6 cylinders in-line
- Water cooled with tropical radiator
- 12 or 24 Volt electrical system with starter and battery
- Electronic or mechanical governor
- Output: 48 kW at 1500 rpm

Alternator:

Output: Minimum 60 kVA at 1500 rpm base rating

- Insulation to class H
- To CEI 2.3, IEC 34.1, VDE 0530, BS 5000
- Self regulating, 4 pole, single bearing type
- Fabricated steel shell with drip proof air ducts (minimum level of drip proof protection: IP23)

General:

- Engine close coupled to alternator
- Mounted on anti-vibration mounts on fabricated skid base
- Fuel tank incorporated into base
- Lifting points for handling.

Control Panel:

Steel panel fitted on the set including:

- Ammeter with switch, Voltmeter with switch, Hour meter, Tachometer and Frequency meter
- Key start/stop
- Main 3-pole circuit breaker
- Instruments:
  - Water temperature
  - Oil pressure
  - Battery voltmeter

Standard Accessories:

- Automatic shutdown on low oil pressure or high engine temperature
- Engine Makers' tool kit
- Operator manuals
- Tropical radiator
- Oil, air and fuel filters
- Flexible exhaust pipe, heavy duty industrial silencer and guards
- Fuel tank gauge
- Heavy duty air cleaner

Diesel Generating Sets, 60 kVA Contd...

Spares and optional extras:

- Spare parts (2500 h)
- Automatic mains failure panel comprising of:
  (a) autostart control panel
  (b) battery trickle charger
  (c) auto changeover panel
- Weatherproof canopy
- Acoustic canopy (85 dBA at 1 m)
- Fast moving road trailer
- Socket outlets (CEE type) - 1 x 32 AMP, 3 phase
  - 2 x 16 Amp. single phase
- 25 m supply cables (1 x 3 phase, 2 x single phase) with plugs
- Low resistance earth rod with 4 m cable.

Notes

Notes

Chapter 2 SHELTER, HOUSING AND COOKING APPLIANCES

General

This chapter covers following areas:

- Shelter and housing
- Bedding
- Kitchen accessories
- Heating/cooking equipment

Shelter and housing

Shelter must as a minimum provide; protection from the elements, space to live, rest and store belongings, privacy and emotional security. Shelter is likely to be one of the most important determinants of general living conditions and is often one of the largest items of non-recurring expenditure.

While the basic need for shelter is similar in most emergencies, issues such as the kind of housing needed, what materials and design are used, who constructs the housing and how long it must last, will differ significantly in each situation. In cold climates or those areas subject to daily extremes in temperature, lack of adequate shelter can have a particularly adverse affect on health. Thus, in addition to shelter, provision of sufficient blankets, sleeping mats, beds, appropriate clothing and even heaters will in some cases be a high priority.

To meet these varying situations, the following items are covered in the catalogue:

- Tarpaulins
- Shelter kit, family size
- Tents, shelter

The best way to meet emergency shelter needs is to provide the same materials or shelter that would commonly be used by the refugees or the local population. The simplest principles and structures, and labour intensive building methods, are to be preferred. The design of shelter and more permanent housing should, if possible, provide for modification by the occupants to suit their individual needs.

The key to providing an adequate shelter is the provision of a solid and robust roof. If a complete shelter cannot be provided, provision of adequate roofing will be the priority. Plastic tarpaulins (woven and non-woven types) are in most cases the best materials available. These materials are also very useful in protecting minor stockpiles, latrines etc.

Tents are often not an effective means of providing shelter as they are difficult to live in and provide little insulation against extremes in temperature. There are however, circumstances in which tents may be useful and appropriate, for example when local materials are not available, for use as storage or for various other purposes. In areas where the ground can be used as a floor in tents, the Shelter kit can be used as an inexpensive and efficient solution. The life of an erected tent is dependent on climate but may be as long as two years. In areas where the weather is very cold or rainy, a tent should be selected. Where tents are appropriate, repair material should be provided to the occupants.

Utility tents are needed to establish storage facilities, hospitals, schools and other field services. The success of the camp highly depends on these facilities. In order to select a hospital tent, it is important firstly, to establish a requirement for quantities of beds and to determine the types of diseases which have stricken the area. In colder areas, it may be necessary to use a prefabricated house as a hospital to provide the minimum protection against weather.

If the operation is long term and some of the refugees are children, a school tent should be erected. This increases the enthusiasm among the refugees and assists in making the camp a success.

When selecting storage facilities and shelter equipment, a systematic record of needs has to be established. It is important to ensure that the shelter is of sufficient size for its purpose. If the storage

facility consists of several small tents situated in close proximity, the opportunity of loosing equipment and products from stock is increased. It is also necessary to have a proper security system for the storage facility e.g. guards or a proper fence.

To date neither pre-fabricated building systems nor specially developed emergency shelter units have proven effective in refugee emergencies. Reasons include inappropriateness, high unit cost, inflexibility and the fact that emergency shelter arrangements will have been made before these systems can arrive. They are therefore, not included in this catalogue as a commonly used item.

Recommendations for tents

Protected from:	Mosquitoes, refuse dumps, adverse weather conditions, commercial and industrial zones
Average number of persons per family:	5 persons
Floor area in tent:	3.5 m^2 per person in tropical climates 5 m^2 per person in colder climate
Preferable tent area:	17.5 m^2 in tropical climate 25 m^2 in colder climate
Minimum height of side wall of tents:	90 cm

Bedding

There is a significant need for blankets in an emergency situation. Depending on the climate, blankets are one of the most valuable items in emergency situations. The catalogue covers the following bedding:

- Blankets, woven dry-raised
- Blankets, fleece
- Sleeping mats

The type of bedding selected for the operation, will depend on the climate. In cold areas where a heavy blanket is insufficient, sleeping bags should be considered.

Kitchen accessories

Kitchen-sets containing basic items are required for food preparation and consumption by the refugees. This catalogue contains three types of kitchen sets:

- Family size
- Dual Purpose Stove
- Jerrycan

Cooking utensils, water carriers/containers, stoves and lighting equipment may be required for family units and communal kitchen facilities - especially for displaced people and those who cannot salvage their own facilities after a sudden disaster.

Utensils and stoves in particular should be the type which are commonly used in the area. Plastic jerry cans are very useful for carrying and storing water, and are easy to handle and use. In many situations, pre-packed family kits of cooking utensils have been found useful, and are therefore included in this chapter.

It should be emphasized that the equipment supplied must consist of a light weight material, but must be packed in a strong double-walled carton. Generally, equipment which can be purchased locally is to be preferred. It is very important that the refugees are aware of how to use the cooking utensils and related equipment and that this equipment can be useful to them, even after the emergency situation is stabilized.

Stoves that require wood or other fuels for operation should be selected rather than those based on an electric principle. Stoves based on a solar energy principle might be necessary in areas where wood or fuel is unavailable.

Furthermore, it is crucial that cooking utensils are disinfected when appropriate. Disinfection can be carried out effectively by various methods, such as:

- Boiling water for minimum 5 minutes
- Chlorine solution, 100 mg/litre for 30 seconds
- Quaternary ammonium compounds, 200 mg/litre for 2 minutes

Family Tent
16m² double fold

UNCCS Code:
271624

1) RIDGE DOUBLE FLY DOUBLE FOLD 4 x 4M FAMILY TENT

SPECIFICATIONS

1. Dimensions:
- floor area 4 x 4 m
- ridge length 4.00 m
- centre height 2.00 m
- side wall 0.90 m

The tents have to have an opening for the chimney for the tent stove.

2) OUTER FLY - SINGLE FOLD.

CANVAS
- 50% cotton (approx), 50% polyester (approx) blend ring spinning yarn count 10/2 x 10/2 twisted in warp 46/48 x weft 26/28 threads/square inch, plain weave.
- Basic weight in loom state 14 oz/sq. metre, finished weight 16 oz/sq. metre.
- Canvas to be free of weaving defects and finishing faults adversely affecting strength, waterproofness and durability.
- Natural canvas colour (acceptable with slight greenish tint due to rot proofing) without objectionable spots/stains.
- Waterproofing/resistance to water penetration by paraffin emulsion and alum acetate to withstand minimum 30 cm hydrostatic head.
- Stabilization against decomposition of the fabric (rot proofing) with copper naphtanate or any appropriate agents, minimum 0.35 percent of dry weight of proofed canvas.

MAKE UP:
- 4 or 5 panels, single fold, 2 inch machine stitched hem on all sides with 2 rows of stitching.
- 4 to 5 stitches per inch with 21/4 English count good quality cotton thread or equivalent.
- 5 or 6 (5 if 4 panels and 6 if 5 panels) equally spaced galvanized steel d - ring (triangular shaped) 6 mm diameter sewn with canvas to hold corners and side ropes.
- Triangular shaped hood canopy of 50 cm wide at ridge band, full length of fly sheet on either end.
- Ridge reinforced on inside with 15 cm canvas in matching material and color.
- Edges hemmed and stitched accordingly.
- Minimum 20 cm overlap margin to cover inner fly.
- 3) inner fly - double fold, i.e. canvas and lining (Dosouti)

3) RIDGE DOUBLE FLY DOUBLE FOLD 4 x 4 M

CANVAS
- 50% cotton (approx), 50% polyester (approx) blend ring spinning yarn count 10/2 x 10/2 twisted in warp 46/48 x weft 26/28 threads/square inch, plain weave.
- Basic weight in loom state 14 oz/sq. metre, finished weight 16 oz/sq. metre.
- Canvas to be free of weaving defects and finishing faults adversely affecting strength, waterproofness and durability.
- Natural canvas colour (acceptable with slight greenish tint due to rot proofing) without objectionable spots/stains.
- Waterproofing/resistance to water penetration by paraffin emulsion and alum acetate to withstand minimum 30 cm hydrostatic head.
- Stabilisation against decomposition of the fabric (rot proofing) with copper naphtanate or any appropriate agents, minimum 0.35 percent of dry weight of proofed canvas lining (Dosouti)

Family Tent
16m² double fold

Contd...

- 100 pct cotton, yarn count 20 x 20 in warp and weft, 32 threads per inch in warp and weft, 2 x 2 weave, min 6 ozs. per square meter in finished state.
- dyed yellow, uniform colour-fast to water, no objectionable stains/spots

MAKE UP:
- (All measures are on a finished and pitched tent)
- Two fold outer side canvas and inner side Dosouti lining.
- 4 or 5 (2 folds) panels.
- Full length suspension loop made of same canvas 16 cm wide properly sewn into the outside of the inner tent ridge to ensure the distance of 15 cm between both flies.
- Dosouti lining to sewn to the inner fly along the canvas panel joints to allow maximum interior space.
- 3 inches reinforced eaves with 5 or 6 equally spaced galvanized, rings (triangular shaped) 6 mm in diameter sewn with canvas to hold corners and side ropes.
- Side wall 90 cm high : 70 cm made of canvas and Dosouti lining and 40 cm of 100 % PVC coated fabric of 450 gram/m 2, UV resistance, single layer, 20 cm to serve as side wall (without canvas and Dosouti) and 20 cm as mud flap.
- Ridge reinforced on inside with 15 cm wide canvas in matching material and colour lengthwise.
- Strengthening patches each corner where wall, roof and doorways are joined.
- 1 window on each sidewall, size 40 cm x 60 cm with cross strengthening bands, mosquito nets and adjustable canvas flaps.
- Front and rear doors of same materials sewn into roof with eyelets 15 cm spacing for door laces.
- Same PVC mud/wind flap of 40 cm sewn to the doors making up the lower 20 cm plus 20 cm as mud flap.
- 14 canvas tabs with 6 mm diameter galvanized steel appropriately spaced around the perimeter of the tent at meter intervals.
- Caps at both ridge ends strongly reinforced with canvas and hot dip galvanized steel grommets sewn into canvas for upright pole.
- All seams to be sewn in two rows lock stitch with 21/4 English count) good quality cotton thread or equivalent, except hand stitching where required.

GROUND SHEET
- Dimensions: 4 m x 3 m or 4 m x 4 m
- Material: woven propylene and covered on both sides with low density polyethylene (LDPE). Edges folded and sewn with one row of stitching, stitches with 21/4 (English count) good quality cotton thread or equivalent min. Weight 200 gr/sqm.

ROPES
- Guy ropes made of 9 mm 3 strands nylon or polypropylene with tensile strength of not less than 300 kg, knotted securely to tent. Guy runners to be made of 5 mm diameter galvanised steel, approximately 11 cm long.
- Loop lacing for doors - 5/7 mm cotton spun yarn.

Family Tent
16m² double fold

Contd...

POLES/BEAM

- 4 meter long, 48 mm diameter painted (long lasting paint - powder coated paint or equivalent) steel pipe minimum 1.5 mm wall thickness (2 sections of 2 meter each screwed and socketed).
- 11 mm holes drilled at one end of other two sections for up - right poles pins to fit in each section, should be fitted together without coming apart when erected.
- Two upright poles of 2.15 m each, made of 47/48 mm diameter powder coated painted steel pipe, minimum 1.5 mm wall thickness with screwed based plate of 15 cm diameter powder coated painted one end and a 10 cm diameter screwed top plate with 9 mm diameter powder coated painted, metal pin 10 cm long, welded to Pole cap on other end.

ACCESSORIES AND REPAIR KIT

- 12 metal powder coated painted pins of 25 cm long before hooking, made of steel rod 9 mm diameter, sufficient to withstand heavy impact from hammer.
- 12 metal powder coated painted pegs of 50 cm long, made of equal t - bar 2 x 2 cm x 2 cm, 3 mm thick. Pegs are to be notched twice with 10 cm, distance from 1 side to hold the rope properly, peg to be printed on the other end.
- One metal hammer of 1.5 kg with 45 cm wooden tapered handle. Metal head to be firmly secured to the handle by means of a wedge.
- One repair kit, consisting of one straight and one curved strong needles with 20 m of suitable thread for repairing the tent.
- 1 assembly instruction sheet.

PACKING

- Outer/inner flies and groundsheet folded and rolled with all accessories and poles wrapped in canvas cloth inside the bundle.
- Each bundle shall then be polyethylene lined, wrapped with strong hessian cloth and stitched and strapped with nylon bands.

SHIPPING MARKS

- Shipping marks to be printed clearly on separate piece of white canvas cloth (minimum 35 cm x 60 cm) in indelible ink for maximum visibility and secured with the nylon bands of the packing.

School Tent
Frame Tent Classrooms

UNCCS Code:
271620

SCHOOL TENT 6 x 7 m - FRAME TENT CLASSROOMS

1. DIMENSIONS

- Ground length: 7.00 M
- Central height Internal: 2.90 M
- Side wall height: 2.05 M
- 10 pcs standing poles
- 12 pcs ridge poles
- 15 sockets
- Ground width: 6.00 M
- Central height Outer line: 3.20 M
- frame to consist of:
- 10 pcs beam poles
- 10 base plates

2. OUTER FLY - SINGLE FOLD

- 50% cotton (approx), 50% polyester (approx) blend ring spinning yarn count 10/2 x 10/2 twisted in WARP p 46/48 x WEFT 26/28 threads/square inch, plain weave.
- basic weight in loom state 400 gr/sq. metre, finished weight 450 gr/sq. metre.
- Canvas to be free of weaving defects and finishing faults adversely affecting strength, waterproofness and durability.
- Natural canvas colour (acceptable with slight greenish tint due to rot proofing) without objectionable spots/stains.
- Waterproofing/resistance to water penetration by paraffin emulsion and alum acetate to withstand minimum 30 cm hydrostatic head.
- Stabilisation against decomposition of the fabric (rot – proofing) with copper naphtanate or any appropriate agents, minimum 0.35 percent of dry weight of proofed canvas

MAKE-UP:

- 2 inch machine stitched, hem on all sides with 2 rows of stitching, 5 stitches per inch with 21/4 (English count) good quality cotton thread.
- Steel grommets (8 gauges) sewn with 10/8 x 2 cotton string, equally spaced into panel joints and ends.
- Triangular shaped hood canopies of 100 cm width at ridge, both gable ends.

Outer fly rests on extended ridge frame/pole, supported by some 5 vertical ends.
Eaves of the fly sheet are supported by 5 bamboos or steel poles either sides.

3. INNER TENT: 2 FOLDS - CANVAS AND DOSOUTI LINING

- 50% cotton (approx), 50% polyester (approx) blend ring spinning yarn count 10/2 x 10/2 twisted in WARP 46/48 x WEFT 26/28 threads/square inch, plain weave.
- basic weight in loomstate 400 gr/sq. metre, finished weight 450 gr/sq. metre.
- canvas to be free of weaving defects and finishing faults adversely affecting strength, waterproofness and durability.
- natural canvas colour (acceptable with slight greenish tint due to rot proofing) without objectionable spots/stains.
- waterproofing/resistance to water penetration by paraffin emulsion and alum acetate to withstand minimum 30 cm hydrostatic head.
- stabilisation against decomposition of the fabric (rot – proofing) with copper naphtanate or any appropriate agents, minimum 0.35 percent of dry weight of proofed canvas

DOSOUTI LINING:

- 100 pct cotton, yarn count 20 x 20, 32 x 32 threads per inch in WARP and WEFT, 2 x 2 weave, min. 7ozs per square meter in finished state.
- dyed yellow, colorfast to water

MAKE-UP:

- lining to be sewn to the inner fly along the canvas panel

School Tent
Frame Tent Classrooms

Contd...

JOINTS
- 3 inches reinforced eaves (eventually with 8 mm rope)
- 7 hot dip galvanized 8 gauge grommets sewn with 10/8 x 2 cotton string to hold corner and side ropes, either side
- Side walls 2.05 m made up of 1.60 m canvas measured from top of wall and 60 cm wide mud flap/ splash wall made of pvc coated polyester sewn to bottom of side wall canvas

MAKING UP
The lower 45 cm of wall. (pvc to replace bottom of wall and not to be sewn on top of the canvas). Weight some 500 g/sqm (approx. tensile strength WARP 230 kg, WEFT 200 kg, approx. wing tear: WARP: 30 kg, WEFT 10 kg)
- Two doors provided (approx. 2.00 x 1.00 m) on each gable end. Closure with roll up flap and loop lacing (grommet every 15 cm).
- Windows (2 each side) provided (at 90 cm above ground), each measuring (approx. 1. 20 x 0.60 m), with strengthening bands mosquito nets and adjustable canvas flaps (overlap min 10 cm each)
- Ridge reinforced on inside with 20 cm wide canvas strip in matching material and colour.
- Ridge perforated with 5 grommetted openings for passage of support frame for outer fly sheet.
- All canvas areas in contact with the metal frame should be reinforced with 15 cm wide canvas strips sewn to roof and wall panels.

FRAME:
- Self-supporting steel frame to be secured with a minimum of ropes and guy wires consisting of some 5 sections. Steel tubing with lateral cross braces and with adequately strengthened connectors of equal angels.
- All steel tubing hot dip galvanized.
- Foot pole fixation plates (with holes for bolting on concrete slab)

ROPES:
- All ropes made of 9 mm, 3 strand nylon or polypropylene with tensile not less than 750 kg, knotted securely to tent (outer/inner fly) and guy runners, made of 11 cm long hard wood pieces).

6. ACCESSORIES AND REPAIR KIT:
- Painted metal pins of 40 cm long made of steel rod 9 mm, sufficient to withstand heavy impact from hammer.
- Painted metal pegs "t" type bar 40 mm x 20 mm, length 50 cm, flangness 4 mm with a notch to avoid rope from slipping.
- 2 x 1 metal hammers with 45 cm wooden handles, wedged securely 6.4 1 repair kit consisting of one straight and one curved needle with 20 m thread for sewing.

7. GROUND SHEET:
- Dimensions: 14 m x 6 m
- Material: woven propylene and covered on both sides with low density polyethylene (LDPE). Edges folded and sewn with one row of stitching, stitches with 21/4 (English count) good quality cotton thread or equivalent minimum weight 200 gr/sqm.

8. PACKING:
- Each tent to be wrapped in hessian cloth, polyethylene lined stitched and strapped with nylon band on both sides
- bundle of accessories packed in double hessian cloth
- packing of complete tent in easily identifiable manner, with colour coding specify weight and volume 1 complete tent include full descriptive drawing of proposed tent.

Hospital Tent

UNCCS Code:
271624

HOSPITAL TENT

1. DIMENSIONS

- Size: 80 square meters
- Rectangular: 14 m x 6 m
- Hospital tent to accommodate 10 beds
- minimum size: 80 square meters
- 2 rectangular: 14 m x 6 m
- centre height approx 3.6 m minimum
- wall height approx. Minimum 2 m in detachable 2 m sections

2. INNER TENT: TWO FOLDS CANVAS AND DOSOUTI LINING

CANVAS

- 50 % cotton (approx), 50% polyester (approx) blend ring spinning yarn count 10/2 x 10/2 twisted in warp 46/48 x weft 26/28 threads/square inch, plain weave..
- Basic weight in loom state 450 gr/sq. Metre, finished weight 450gr/sq. Metre.
- Canvas to be free of weaving defects and finishing faults adversely affecting strength, waterproofness and durability.
- Natural canvas colour (acceptable with slight greenish tint due to rot proofing) without objectionable spots/stains.
- Waterproofing/resistance to water penetration by paraffin emulsion and alum acetate to withstand minimum 30 cm hydrostatic head.
- stabilisation against decomposition of the fabric (rot – proofing) with copper naphtanate or any appropriate agents, minimum 0.35 percent of dry weight of proofed canvas.

DOSOUTI LINING:

- 100 pct cotton yarn count 20 x 20 in warp and weft, 32 x 32 threads per square inch in warp and weft, 2 x 2 weave, min. 6 ozs. per square meter in finished state.
- Dyed yellow, colorfast to water, uniform colour without objectionable stains/spots.
- To be sewn to the inner tent along the panel joints and to lining to stop at the splash wall with an overlap of 2 to 3 cm.

3. OUTER FLY: SINGLE FOLD

- Same material as inner fly tent canvas.
- To extend inner tent by 30 cm at eaves and 60 cm at gable ends
- Eaves of the outer fly should have a height of 2.30 m
- Eaves to be supported under each guy rope with bamboo poles length 2.35 m, width 30 mm or steel poles (diameter 25 x 1.5 mm) length 2.35 m, mm. This is to ensure clear distance of 25-30 cm between inner tent and outer fly.
- 5 cm strengthening band to hold all rope fixations securely
- Provided with galvanized d-rings (triangular shape, 8-9 mm in diameter), sewn with canvas (10/2) to hold corners and side ropes

4. ROPES:

- Ropes made of 9 mm 3 strands nylon/polypropylene with tensile strength of not less than 750 kgs, knotted securely to tent.
- Slip proof runners flat double hole, hard wood 15 cm long 10 cm between the holes. Runners treated against termites.
- Each side 3 guy ropes of 7 meter long
- Each corner double rope of 4 meter
- Other 32 ropes each 3.5 meter long

Hospital Tent

Contd...

5. MAKE UP:

- 4 side walls, 2 x 6 meter long and 2 x 14 meter long
- Height minimum 2 meter made up of 1.60 m canvas and 60 cm PVC coated polyester: 450 g/m^2, sewn to the bottom of the wall as splash wall (i.e. PVC to replace bottom of wall and not to be sewn neither on top of canvas nor on top of the Dosouti lining). PVC overlaps of 20 cm to serve as mud flap. Corner positions of the Mud flap to be cut to allow mud flap to extend properly.
- Strengthening band and yarn on the splash wall must be of synthetic material.
- Loops to be provided every 15 cm on the roof and eyelets on the top of the side walls to join the inner roof and side walls together (loop lacing).
- sides to be joined together by loop lacing in such a way that good wind proofing are provided. (distance 15 cm)
- Overlap of sidewalls at corners should be min 20 cm
- 20 cm double flap to be sewn to the eaves of the roof on all four sides to provide insulation on inner and outer walls between roof and side wall. Outside flap to be of same material as tent. Inside flap to be of Dosouti lining material.
- Doors: 2 m x 2 m - 1 doors with roof at each gable end. When opened to serve as canopy roof supported by two bamboo or steel poles door flap to be closed by means of loop-lacing
- Threshold of the door opening to be made only of PVC coated polyester fabric. 1 door on each side wall without roof.
- Windows - size: 60 x 50 cm - with cross strengthening bands mosquito nets and adjustable canvas flaps to overlap window opening by 10 cm on each side. Canvas flap to be placed high enough to allow fold away clear of window opening. Windows to be placed evenly along the side walls and 90 cm above bottom.
- Windows 40 cm x 60 cm to serve as ventilating device on each roof side, on inner tent evenly distributed over the length and positioned 1 m below the ridge.
- Tents to be attachable by means of strong ropes
- Corners to be provided with canvas reinforcements (same material as tent canvas)
- Galvanized d-rings (triangular shape) 8-9 mm in diameter sewn with canvas (10/2) to hold corner and side ropes
- All seams to be sewn in 2 rows lock stitched with 101 (commercial number) or 21/4 (English count), except hand stitching
- Ground fixation : galvanized d-rings 8-9 mm in diameter sewn to bottom of PVC splash wall with rot proof yarn (polyester/nylon)
- All bottom tabs must be of synthetic material.

6. FRAME:

- Constructed of hot dip galvanised steel poles, 48 mm diameter and 1.5 mm wall thickness.
- Beam spacing every 2 m.
- Side poles provided with sturdy base plates to withstand wind strength of minimum 30 m/second.

7. GROUND SHEETS:

- Dimensions: 14 m x 6 m.
- Material: P.P. fabric laminated both sides 200gr/m^2 edges folded and sewn with two rows of stitching 5 stitches per inch with 21/4 (English count) good quality cotton thread or equivalent.

8. ACCESSORIES & REPAIRING KIT

- Iron pegs t bar 40 mm x 20 mm, length 50 cm, flanges 4 mm with a notch to avoid rope from slipping.
- Iron pins 30 cm long, 9 mm dia.
- Iron hammers, 1.5 kg with wooden tapered handle 45 cm long
- Repairing kit consisting of one curved and one straight needle and 20 m sewing thread.

Reinforced Plastic Tarpaulins Sheets

UNCCS Code:
271612

General Description
Plastic tarpaulins sheets 4 x 5 m

Technical Specifications:

- Sheets of 4 m x 5 m (finished size) for outdoor use made of woven high density black polyethylene fibres, warp x weft 12/14 x 12/14 per square inch, laminated on both sides with low density polyethylene, with reinforced rims by heat sealing on all sides, (or 2 sides heat sealing and 2 sides double stitching), and nylon ropes in hem. 1000 denier minimum;
- Stabilized against ultraviolet rays and excess heat for long outdoor exposure. Max. 5% loss on original tensile strength under ISO 1421 after 1500 hours UV under ASTM 653/94 (UVB 313 nm peak).
- provided with strong aluminium eyelets or equivalent on four sides of the single sheets at 100 cm +/-5 cm centre to centre;
- material weight: minimum 200 gr/m2 +/-5%;
- tensile strength: minimum 600 n both directions of warp and weft (BS 2576, 50 mm grab test, or equivalent)
- tear resistance: minimum 100 n both directions (BS 4303 wing tear or equivalent);
- flammability (CPAI 84-1995, section 6): above 200 degrees C°;
- color: white on both sides
- packing: in bales of 5 sheets and secured with polyester band;
- gross weight per bale: approx. 22.5 kg;
- gross volume per bale: approx. 0.0456 CBM;

Packing:

- number of sheets per 20' container – 3,000 (without pallets);
- number of sheets per 40' container – 6,000 (without pallets);
- number of sheets on pallets per 20' container – 2,400 (30 bales/pallet, 16 pallets);
- number of sheets on pallets per 40' container – 5,400 (30 bales/pallet; 36 pallets);
- Pallets:
  - plastic, size 120 cm x 110 cm x 13 cm.
  - 3 longitudinal bottom deck lead boards.
  - Feet are not acceptable.
  - The palletized goods must not exceed the length and width of the pallet.

Reinforced Plastic Tarpaulins In Rolls

UNCCS Code:
271616

General Description
Plastic Tarpaulins rolls 4 x 50 m

Technical Specifications:

- rolls of 4 m x 50 m (finished size) made of woven high density black polyethylene fibres, warp x weft: 12/14 x 12/14 per square inch, laminated on both sides with low density polyethylene;
- Stabilized against ultraviolet rays and excess heat for long outdoor exposure. max. 5% loss on original tensile strength under ISO 1421 after 1500 hours UV under ASTM 653/94 (UVB 313 MPEAK)
- material weight: minimum 200 gr/m^2 +/-5%
- tensile strength: minimum 600 n both directions of warp and weft (BS 2576, 50 mm grab test, or equivalent);
- tear resistance: minimum 100 n both directions (BS 4303 wing tear or equivalent);
- flammability (CPAI 84-1995, section 6): above 200 degrees C°;
- color: white on both sides
- packing: in rolls folded in the middle and wound;
- gross weight per bale: approx. 23.0 kg;
- gross volume per bale: approx. 0.04 CBM;
- number of rolls per 20' container – 250 (without pallets);
- number of rolls per 40' container – 550 (without pallets);

Packing:

- number of rolls on pallets per 20' container – 256 (16 rolls/pallet, 16 pallets);
- number of rolls on pallets per 40' container – 576 (16 rolls/pallet, 36 pallets);
- Pallets:
  - Plastic, size 120 cm x 110 cm x 13 cm.
  - 3 longitudinal bottom deck lead boards.
  - Feet are not acceptable.
  - The palletized goods must not exceed the length and width of the pallet.

Fleece Blankets

UNCCS Code:
271125

Area of use:
For cold climates

Technical Specifications:

- Composition: Polyester 100%
- TOG (Thermal Resistance of Garment): min: 1.5
- Bursting strength: 350 KPA, min: 25 kg both ways
- Thickness: min 3.5 mm under load of 20 g/cm^2
- Weight: 250 g/m^2
- Colour : Assorted colours (Dark Blue, Grey, Brown, Dark Red)
- Dimension: 150 cm x 200 cm
- Edges: Folded and Stitched

Packing/Transport:

- In bales of 30 blankets; size of bag 45 x 35 x 65 cm
- 5,250 blankets per 20 ft container without pallets
- 10,500 per 40 ft containers, without pallets
- 3,480 blankets per 20 ft container, with pallets
- 6,960 per 40 ft container, with pallets

Woven Dry Raised Blankets

UNCCS Code:
271124

Area of use:
For temperate climates

Description:
- Woven Dry raised Blankets
- Minimum 30% Wool (virgin or reconditioned)

Balance other virgin fibres (e.g. cotton) or cotton/synthetic mix
- Dimension: 150 x 200 CM preferably 160 x 210 CM.
- Thickness: Min. 4 mm thick (measured under a load of 20 g/cm^2)

Before compression low resilience after compression
- Weight: Min. 1.5 kg/blanket
- T.O.G. (Thermal Resistance of Garment): 1.4 -1.6
- Tensile Strength (BS2576, 2" GRAB)

PACKING:
- Bales of 25 pieces with ear flaps at each corner
- Wrapped in polyethylene cover and strongly strapped with four strong straps
- 4,500 blankets per 20 ft container
- 9,000 per 40 ft containers non-palletized

Kitchen Set

UNCCS Code:
429187

General information
Cooking and serving utensils for 5 people.

a) 1 x 7 litre aluminium cooking pot minimum thickness 1.75 mm, with lid minimum thickness 1 mm, two round thick wire rod handles, sandpaper finish.

b) 1 x 5 litre aluminium cooking pot minimum thickness 1.6 mm with lid minimum thickness 1 mm, two round thick wire rod handles, sandpaper finish.

c) 5 x deep stainless steel plates, 1 litre capacity, minimum 24/25 cm diameter with border, 1 litre capacity, polished finish.

d) 5 x stainless steel cups, 0.3 litre capacity with handle and rolled border edge, polished finish.

e) 5 x stainless steel table-spoons, polished finish.

f) 1 x kitchen knife with stainless steel blade, cutting edge 14/15 cm long, 2.5 cm wide with moulded plastic handle.

g) 1 x stainless steel serving spoon, 30 -35 CMS. Stainless Steel grade J4 (S20430)

Packing/Transport
- 4 sets per carton
- 2,200 per 20 ft container
- 4,500 per 40 ft container
- 5,000 per 40 ft hc

Synthetic Sleeping Mat

UNCCS Code:
271657

General Description:
The mats shall be from 100% synthetic yarns in a tightly woven 2/2 will structure using a monofilament warp and thick tape pp yarn in weft. the end widths are to be secured with a woven, bias-binding tape with stitches, through the fabric of the mat.

Technical Specifications:

- Size: 1.8 x 0.9 M
- Weight: 0.500 kg/sq m minimum
- Material: Trim finished.
- Waterproof and Tear proof

Packing:

- It is important that this binding is secure and durable to prevent fraying of the mat which would result in rapid disintegration of the structure.
- 25 mats per bale
- Approx. 4500-5000 per 20 ft container
- 10,000 per 40 ft container

Semi-Collapsible Jerrycan

UNCCS Code:
369491

Use:
For carrying and storing water

Description:
- Plastic Jerrycan semi-collapsible 10 Litres

Technical Specifications:
- 10 litres semi-collapsible Jerrycan manufactured of food grade LDPE
- Jerrycan suitable for drinking water, with built-in handle without sharp edges, wide enough for a male adult hand.
- Handle to be situated in the centre of the top of the standing jerrycan.
- Material used must be tested by recognised laboratory for potable water purposes, to withstand drop from minimum 2.5 metres containing maximum volume of water at 25 degrees Co must stand by itself, even when filled with less than 1/4 of its maximum volume.
- Operating temperature -20 C to 50C.
- Average thickness approx. 0.6mm min. corner thickness 0.5 mm
- Screwable cap fitted on jerrycan and linked to container by polyamide string with diameter of min 1 mm and approx. 120 mm length.
- Inner diameter of cap approx. 35 mm. weight approx. 190 -230 grams

Packing/Transport
- 10,000 per 20 ft container
- 20,000 per 40 ft container

Bucket, Plastic

UNCCS Code:
369424

General information

- Water storage, protected from pollution with the clipped cover and cap.
- Easy to fill up and pour with the 50 mm opening. Easy to carry by hand with a strong flat handle on the head, with a round bottom shape and a reinforcement ring.
- Efficient cleaning possible by removing the cover and having inner rounded edges.
- Stacking possibilities to lower transport costs (4320 pieces in 1 TC20ft with pallets, 4900 pieces in 1 TC20ft without pallet), 160 pieces per m^3.
- Strong and durable quality for a long life span in tough conditions.

Dual Purpose Stoves

UNCCS Code:
448220

Type:
Kerosene heating-cooking stoves

Specifications:
- Double fuel tank capacity 5.2 litres
- Heat output 7800 -8900 BTUs
- Fuel consumption 0.24 -0.28 litres/hour
- Each stove to be supplied with 1 funnel for easy and safe fuel filling.

Packing:
- Each stove to be individually packed in its own carton, including spare wicks.
- Funnel to be packed together with stove. Each stove is to be supplied with 3 spare wicks.

Notes

Notes

Chapter 3 WATER, SANITATION AND HYGIENE (WASH)

General - Water

To save lives and preserve health, minimum quantities of safe water must be made available. The following indications are standard guidelines to be considered when setting up a water supply system.

Water requirements

When setting up a water supply system, the following minimum water requirements should be considered:

a) Human consumption

– Minimum, "Survival" allocation:	7	litres/person/day
– Average refugee camp allocation:	15-20	litres/person/day

b) Average for services at camp level (Additional to human consumption)

– Out-patient health centers	5	litres/patient/day
– In-patient health centers	40-60	litres/patient/day
– Hospital (with laundry facilities)	220-300	litres/bed/day
– Schools (Toilet requirement not included)	2	litres/person/day
– Schools (Water-flushed toilet system)	10-15	litres/person/day
– Feeding centers	20-30	litres/person/day
– Camp administration (Staff accommodation not included)	5	litres/person/day
– Staff accommodation	30	litres/person/day

c) Livestock

– Bovine animals	25-30	litres/head/day
– Horses, mules	20-25	litres/head/day
– Goats and sheep	15-20	litres/head/day
– Pigs	10-15	litres/head/day
– Chickens	10-20	litres/100 animals/day

However, if there are no restrictions or water supply limitations, the use of water may even reach up to 100 litres/person/day, if desired.

Water sources

The most important component of a water supply system is the water source. There are three main sources of natural water; groundwater, rainwater and surface water. Groundwater is generally the clearest and purest (there are exceptions, e.g. arsenic in the ground water in India and Bangladesh), followed by rainwater and then surface water.

The following should be considered when choosing the appropriate water source:

- Volume of supply
- Reliability of supply (taking into account seasonal variations and, if necessary, logistics)
- Water quality, risk of contamination and ease of treatment
- Speed and cost with which a source can be made operational
- Simplicity of technology and ease of maintenance
- Costs of operation and maintenance

Water pumping

In an emergency situation there are various needs for pumping equipment, notably to:

- Pump water from wells or boreholes
- Pump water from surface water
- Pump water into storage tanks
- Boost water within the system

To distribute water from the water tank to the end user, gravity flow should be utilized where feasible. However, in cases where gravity flow is impossible, a pump is required for distribution.

Pumps commonly used in emergency situations can be divided into two categories:

a) Reciprocating pumps

Reciprocating pumps are typically hand-pumps, which retrieve water from wells. There are different types of reciprocating pumps, depending on the dynamic water level.

- Suction Pumps
- Direct Action Pumps
- Lever type Pumps
- Fly wheel type Pumps

These are not discussed in this catalogue since they are usually used in a later stage of emergency.

The suction pump can only lift water up to 7 meters and can therefore only be used in shallow wells and boreholes with a very limited depth. Hand-pumps are typically used up to 50 meters dynamic water level. Extra deep well hand pumps can be used at higher dynamic water levels; however the flow rate becomes very low. For deeper wells or boreholes it is necessary to use a deep well pump, such as a submersible pump.

There are three important characteristics to be aware of when selecting hand-pumps for water supply. They can only be used for applications which do not require a larger water supply as the typical flow rate of a hand pump is about 1 m^3/hour (although it is reduced the higher the setting depth). Hand pumps should only be selected when the group of people can be divided into smaller groups (maximum 200 persons/pump). It should be noted that the design from a traditional point of view is important for the success of selecting hand-pumps.

b) Centrifugal pumps

The centrifugal pump is motorized and can, depending on the type, be used to transport water from all sources. There are two categories of centrifugal pumps:

- Pumps used for surface water and shallow wells
- Submersible pumps

When the water leaves the pump, it can be transported to a storage tank, treatment equipment etc. The maximum lift from the pump to the destination depends on the pressure from the pump. The pumps listed in this catalogue can force the water up to approx. 50 meters. It is recommended however, that the lift of the pump be as low as possible to achieve the highest flow. If it is necessary to force the water to a higher level, a combination of pumps can be used to boost the system (inserting a pump half way up). In this case, it is essential to consult a technician to establish a functional system.

A submersible borehole pump is needed in boreholes deeper than 7 meters. The pump operates under water with an electrical motor and needs a power supply on the ground, usually a generator.

Water treatment

Depending on the water source and quality, a water treatment system may be required. Water treatment can involve many unit operations and unit processes, which should be chosen according to the available raw water quality. The basic types of treatment units or systems covered in this catalogue are as follows:

- Screening for floating objects
- Micro-straining for algae and coarse particles
- Gravity separation for suspended solids
- Chemical precipitation for turbidity and/or colour removal
- Sand filtration
- Chlorine and UV disinfection
- Membrane or evaporation systems

The most commonly used processes in emergency situations are filtration, proceeded by chemical precipitation when necessary, and chlorine disinfection. Other processes such as UV disinfection and chemical precipitation are included in the catalogue to account for emergency situations where chlorine disinfection and filtration alone are not enough to produce a potable water, or when only brackish water are available as source of supply.

Chlorine disinfection is a very effective means of eliminating microbiological contamination of drinking water. When applying the adequate chlorine dosage a contact time of approximately 30 minutes must be ensured before the water is distributed. When the source of water is excessively contaminated, consideration must be given to the provision of pre-chlorination. The use of chlorine tablets is recommended for disinfection of small volumes of water, during short periods of time. If the emergency situation calls for disinfection of large volumes, during extended periods of time, adequate chlorine equipment for dosing chlorine gas or hypochlorite solutions should be utilized.

Since the treated water can undergo contamination in the distribution system, a residual chlorine should be maintained in the water supplied. The residual chlorine should be frequently monitored and additional chlorine may be added into the lines or distribution reservoirs, if deemed necessary.

Water storage

To acquire a reliable and effective water supply and compensate for variations in water use during the day, it is necessary to have a storage tank of an appropriate size. The situations and locations where tanks can be used are as follows:

- At the water collection point (raw water tanks at surface water intake, run-off water collection and storage facilities)
- At central storage tanks, before or after treatment to balance the supply from the source with the needs and in many cases, to provide the system with enough hydraulic head to allow for gravity-fed distribution.
- In connection with sand filtration
- At distribution points which may include public stand posts and other service points (health or feeding centres, camp administration facilities and sometimes at staff houses)
- At household level

In some cases, a transportable storage tank is required to transport water to areas lacking a water supply.

In emergency situations, it is customary to place the stationary water tank after the treatment and before the distribution system. This arrangement ensures the most efficient means of chlorination. In special cases where the chlorination is replaced and not combined with UV-light and special filtration, treatment should be after the storage tank and as close to the distribution point as possible.

The size of a storage tank should be in accordance with the water demand of a specific area. If the population to be supplied is smaller than approx. 2000 people, the volume should be equal to at least one day of water demand. For economic reasons, a larger camp population will have less storage capacity but, under no circumstances should this capacity be smaller than 1/6 of the camp's daily water demand. In camps with a population of more than 5000 people, the water storage capacity could be obtained through a battery of smaller reservoirs.

General – Sanitation & Hygiene

When disaster occurs, one of the major concerns is to save the lives of affected people, protect their health and help them return to a normal way of life. Since health protection cannot be effective without the creation of a healthy environment, it is clear that one of the primary tasks in disaster relief is the immediate provision of adequate sanitary facilities. In order to achieve this task, excreta and other waste have to be properly disposed of, food and milk treated and general disinfection and disinfestations measures taken. This includes the rapid control of flies, mosquitoes and other insects, rats and other rodent pests. All sanitation measures must be closely coordinated with those for water supply and health services.

Recommendations

The priority activities are:

- To prevent the spread of disease and promote the establishment of a safe environment.
- To provide the means for reasonable personal hygiene.

UNICEF, being the Cluster lead for WASH sector, has identified the items below as being particularly useful during an emergency. Water and sanitation supplies are essential part of emergency response. However, this list is not exhaustive and other items can be ordered as part of an emergency response.

To view more items for WASH, please refer to the "Reference links" pages at the end of this compendium to access the UNICEF online supply catalogue.

Water Purification (NaDCC) 33 mg tabs/PAC-50

UNCCS Code:
356461

General Description:
- Water purification (NaDCC) 33 mg tablets, pack of 50.
- Pack containing 5 foil strips of 10 tablets each.

Technical Specifications:
- Water purification tablets containing 33 mg sodium dichloroisocyanurate (NaDCC) which releases 20 mg available chlorine.
- The product must be suitable for treatment of water for human consumption (drinking water).
- The anhydrous sodium dichloroisocyanurate (NaDCC) compound must be certified by NSF International (or delegated organism) to the NSF/ANSI standard 60. The product must also comply with the EN 12931:2000 standard.
- The effervescent base used in addition to the NaDCC must be of pharmaceutical or food grade quality.

Transport and storage:
- Cold chain: No
- Dangerous good: No
- Batch managed: No
- Shelf life: 5 years
- Storage: Store in dry and well ventilated room

Instruction for use (prescription, quantity per person, etc.):
- Dissolve 1 tablet in 4-5 litres of clean water.
- Allow contact for 30 minutes minimum before drinking.
- Heavily contaminated water should first be filtered or allowed to settle.

CAUTION:
- Avoid inhaling vapours.
- Do not expose the product to flame.
- Do not incinerate.
- The product can be mixed with anionic detergents such as soft soap. But in case of doubt about the nature of the detergent avoid mixture. Toxic chlorine gas can be released with other types of detergent.
- Do not mix with acid solutions. It causes release of toxic chlorine gas. Store in dry and well ventilated places.

DO NOT SWALLOW THE TABLETS. KEEP OUT OF REACH OF CHILDREN

Precondition for utilisation:
- Adequate explanation and instructions required, especially where low literacy levels exist amongst beneficiaries.

Alternative if the item is not available:
- For 8.5 mg water purification tablets, Water purify. (NaDCC) 8.5 mg tabs/PAC-100

Complementary Requirements, to be ordered/procured separately:
- Household level clean water containers required (e.g. Water cont, PVC/PE, 10l, collaps., w/o logo)

Emergency scenarios
All emergencies where quality of drinking water quality supplied to/accessed by the households is considered high risk

Water Purification (NaDCC) 33 mg tabs/PAC-50

Contd...

Context in which item is mainly used (e.g. reinforce national system/structures, refugee camps, etc.):

- Used as household level safety net for drinking water quality assurance until such time as chlorination/ treatment of centralised supplies can be assured/achieved

Target population (beneficiaries: type and number of persons concerned):

- For family of 5, one month supply for clean drinking water is covered by 9 packs (@50 tabs)

Emergency scenarios where the item should not be used:

- In highly turbid water, NaDCC should be complimented by a flocculant

Other Emergency scenario considerations:

- Tablet dosage needs to be in line with existing container size.

Country considerations:

- Cultural considerations: Residual chlorine requires adaption of beneficiaries to altered taste Time to release of chlorine and settlement to acceptable residual levels needs to be explained.
- Other country specific considerations: Where no prior exposure to similar household level water treatment options exists, attention to awareness and training on safety of water needs required.

Hygiene kit, Adult

UNCCS Code:
362350

General Description:
- Hygiene kit, adult.

Technical Specifications:
- Adult hygiene kit.
- The kits are individually packed in a double wall export carton.
- The kits are produced specially to order.
- Minimum order quantity: 500 kits.

Kit contents/Description:
- 2 x Toothbrush, adult size, medium hardness, individually wrapped.
- 2 x Toothpaste, tube, 75 ml, and peppermint flavour.
- 2 x Soap, toilet, un-perfumed, hypoallergenic, wrapped bar, 100 g, long durability.
- 1 x Soap-box, 2 pieces, boilable plastic.
- 1 x Shampoo, hypoallergenic, PH factor 5.5, bottle 500 ml, minimum shelf life one year.
- 2 x Comb, plastic.
- 1 x Detergent, laundry, concentrated, tub of 2.5 kg, preferably environmental-friendly, for washing laundry by hand.
- 2 x Towel, Turkish, 100% cotton, 50 x 80 cm, 340 gsm (a thick bath towel, with rough, loose, uncut pile, very absorbent).
- 1 x Safety pins, medium size, nickel-free, pack of 12.
- 1 x Washing line, 10 m., polypropylene centre, PVC covered.
- 2 x sanitary towels, disposable, pack of 20.
- 2 x Toilet paper pack of 2 rolls, biodegradable.

Transport and storage:
- Packaging: Double wall export carton, to fit contents.

Instructions for use:
- For adult hygiene in emergency conditions. The contents are intended for a couple for one month.

Instruction for use (prescription, quantity per person, etc.):
- For adult hygiene in emergency conditions. The contents are intended for a couple for one month.

Precondition for utilisation:
- Explanation of items, their use and their benefits at time of distribution, and or through house to house follow-up - this is especially important for beneficiaries that have not used or encountered the items before.

Complementary Requirements, to be ordered/procured separately:
- Cooking set, aluminium, 14 pieces
- Basic family water kit for 10 families
- First aid kit A

Emergency scenarios Type of emergency:
- Any kind of emergency

Context in which item is mainly used (e.g. reinforce national system/structures, refugee camps, etc.):
- For circumstances where affectees have been displaced and or have lost their personal possessions

Target population (beneficiaries: type and number of persons concerned):
- One kit is intended for 2 (adult) beneficiaries (also suited for adolescents and young people).
- Emergency scenarios where the item should not be used: None

Hygiene kit, Adult

Contd...

Other Emergency scenario considerations:

- Replenishment plans should be considered for consumables (especially soap, female sanitary napkins)

Country considerations:

- Cultural considerations: Menstruation related content of hygiene kits may require specific attention (standard material may not be accepted by beneficiaries) and possibly separate distribution to women

Demographic considerations:

- If sanitary napkins replaced by cloth, separate laundry and drying areas need to be encouraged or facilitated

Other country specific considerations:

- Traditional materials and local customs/products need to be taken into account

Chlorine test, DPD Nº1, tablets/PAC-250

UNCCS Code:
342311

General Description:
- Chlorine test, DPD No. 1, pack of 250 tablets.

Technical Specifications:
- DPD No. 1 tablets.
- For testing of drinking water for (Free Chlorine) as Cl2 for ranges of (0 to 10 mg/litre).
- Pack of 250 tablets.

Transport and storage:
- Cold chain: No
- Dangerous good: No
- Batch managed: No

Instruction for use (prescription, quantity per person, etc.):
- The tablets are used for testing for Free Chlorine in drinking water using a colorimeter or disc Comparator.

Precondition for utilisation:
- Trained staff and pool tester required can only be used for chlorinated water supply

Alternative if the item is not available:
- This reagent is also available in powdered form packed in pillows (sachets).

Emergency scenarios Type of emergency:
- All emergencies where water is chlorinated

Context in which item is mainly used (e.g. reinforce national system/structures, refugee camps, etc.):
- Mainly used in refugee settings and to monitor chlorination levels at household level

Target population (beneficiaries: type and number of persons concerned): General

Emergency scenarios where the item should not be used:
- Only to be moved where chlorinated water available or if purification tablets (chlorination) are distributed.

Calcium hypochlorite 65-70%

UNCCS Code:
356465

General Description:
- Calcium hypochlorite powder (stable bleaching powder), supplied in drums.

Technical Specifications:
- Calcium hypochlorite (stable bleaching powder) of HTH equivalent quality.

Available chlorine: Minimum 67% at time of packing.

Moisture:
- Maximum 10% for Transport UN number 2880 (hydrated mixture), or inferior to 5.5% as per UN Number 1748 for dry Calcium Hypochlorite.

Particle size:
- 0.5 mm. minimum 99.5% according to British Standard Specifications.

Stability:
- Does not lose more than 1/15th of available chlorine on heating at 100°C +/-2°C for two hours.

General appearance:
- Dry, free flowing, low dusting, consistent white powder and without hard lumps or impurities.

Transport and storage:
- Cold chain: No

Dangerous good:
Transport as per Material Safety Data Sheet:
- UN number: 1748 or 2880
- Danger class: 5.1
- Packing group: II
- Proper shipping name: Calcium hypochlorite, dry - or - Calcium hypochlorite, hydrated mixtures

Batch managed: No

Packaging:
The product could be packed in two different patterns to fit the mode of shipment:

1. **For sea/land shipment:**
   In max. 45 kg polyethylene drums of export quality or galvanized iron drums of export quality with polyethylene liner inside, with a lid and closure device to form an air tight seal to the drum.

2. **For air shipment:**
   In 10 kg plastic drums suitably packed and marked.
   Dangerous goods code: IMCO 5.1/UN 2880/PG II/IMDG 5238
   Packing classification: UN 1 H 1/Y 19.6•S
   Packing instruction: 511.

Shipping details:
380 x 50 kg drums per 20 (19MT)
For the 48 kg drums, the total load of 20' container will be 18.24 metric tons

Calcium hypochlorite 65-70%

Contd...

Storage:
Ensure storage in sealed containers away from other goods, especially ferrous items and foodstuffs. Storage required be well ventilating and preferably protecting from rain/moisture.

Instruction for use (prescription, quantity per person, etc.):
- Use determined by the quality of raw water being treated and monitored at household
- Point of consumption for adequate residual chlorine
- Disinfection of drinking water for human consumption.

Precondition for utilisation:
- Skin and eye irritant, needs restricted access by trained staff with adequate protective gear

Emergency scenarios Type of emergency:
- All kinds of emergencies - used to eliminate harmful bacteria contaminants in drinking water

Context in which item is mainly used (e.g. reinforce national system/structures, refugee camps, etc.):
- Centralised water treatment context either prior to entering a reticulation system - or prior to filling tankers for distribution.

Target population (beneficiaries: type and number of persons concerned):
- Mass chlorination of water supplies hence aimed at large/concentrated populations

Country considerations:

Cultural considerations:
- May encounter resistance due to change in taste given target to residual chlorine in drinking water
- Climate considerations: Product needs to be protected from extreme heat
- Other country specific considerations: Transportation difficult, especially by air

Electrical Dewatering Pump with Genset, PETROL/DIESEL

UNCCS Code: 432287(Petrol)

UNCCS Code: 432281(Diesel)

General Description:

- Lightweight electrical submersible dewatering or desludging pump for heavily contaminated water with solids up to 50 mm in diameter. Maximum head is 20 m. A suitable PETROL generator is included in the kit.

Technical Specifications:

- Pump set
- 2" submersible/immersible pump with cast iron casing, screw type impeller and tandem mechanical seals running in oil bath. Directly driven by 1.5 kW, 400 V, 3 phase, 50 Hz, IP68 motor. The pump is free-standing on its feet. Complete with male hose tail outlet and 25 meters of cable with 16 A plug fed from the generator set. The lead will be looped and cleated around the pump handle to prevent pulling on the internal connections. A removable anti-dive plate will be attached to the pump to prevent 'boring' in muddy conditions.

Generator

- 6000 Watt 400 Volt 3 phase 50 cycles brushless generator fitted with hours counter, 1 x 16 Amp output socket protected by a power circuit breaker (ground fault detector) earth leakage trip to prevent fatal electric shocks should the power lead or pump develop a fault or be damaged. The generator shall be flanged coupled to the driving petrol engine.

Engine

- OHV engine governed to run at 3000 rpm complete with recoil start, 3 hour fuel tank, low oil protection exhaust system, air and oil filters.

The generator and the engine shall be mounted on anti-vibration mounts inside a robust roll frame.

The Pump and Genset are supplied with following Accessories/Spare parts/Consumables:

Accessories

- 40 m Pump supporting rope (16 mm)
- 20 m Electrical extension cable with socket connectors
- 20 m Cable protection hose (fitted)
- 25 m 2" lay-flat canvas delivery hose & 2" hose clip
- 1 x Sliding collar to fit over the lay-flat where it exits the well
- 1 x 2" BSPT male coupling
- 1 x Two-wheel site trolley for generator set
- 1 x Tool kit comprising spark plug spanner, screw driver and oil drain spanner
- 5 x 1.4 litre containers of engine oil (allowing four complete refills plus spillage)
- 1 x Operators Manual

Spares

One set of spares for 1000 hours operation comprising:

- 2 x Spark plugs
- 2 x Air filter elements
- 1 x 16 A plug
- 1 x 2" hose clip

Electrical Dewatering Pump with Genset, PETROL/DIESEL

Contd...

Packaging:
All the items shall be packed in a sturdy plywood case suitable for sea freight clearly marked with "Electrical Dewatering Pump with Genset, PETROL/DIESEL", the gross weight and dimensions.

Marks shall be on the front and back of the case, as determined by the runners of the forklift.

Instruction for use (prescription, quantity per person, etc.):
Use in:

- Dewatering
- Desludging
- Combating localised flooding
- Cleaning wells

The maximum head of the pump is 20 m; this package is designed to dewater wells at around a depth of 15 m. If higher heads are required, then two pumps of this type can be coupled together to give a maximum head of 40 m (7 m^3/hr at 35 m head) (see below instructions). This pump does not pump air; it does not need to be submersed to pump as in the second pump when pumping in series, but when switching on there should always be water in the pump chamber or the seals will burn in 1-2 minutes. The purpose of the base plate is to prevent the legs of the pump sinking in to the mud causing the impeller to try and drill itself downwards, which results in the pump becoming clogged up. If the base plate is not present either suspend the pump just above the muddy bottom, turn it on its side or put it in a large perforated bucket. If the pump is near its maximum pumping depth the canvas lay-flat may need to be attached to a stake at the top of the well to prevent sliding back into the well. A hose connector can be attached to the end of the lay-flat to make it easier to tie to a stake. This pump can be used for desludging latrine pits.

Instructions for coupling two pumps together in series:
Using the rope provided, the lower pump shall be suspended (by a loop around the handle) at the bottom of the well. The second pump should be suspended some 15 m above the first pump. If two pumps are being used suspend each pump with a separate rope. Great care should be taken when lowering the pumps and gloves should be worn. Remove the base plate of the second pump and connect the lay-flat distribution hose from the first pump into the bottom of the second pump, the kit contains a male connector for this purpose. The electrical extension lead should be attached to the cable form the first pump. The connector is splash proof but not water proof, so avoid submerging this connection under water.

Precondition for utilisation:

- Trained staff required for operation
- Choice of petrol or diesel generator determined by availability on-ground and ease of supply.

Emergency scenarios

- Primary use in removal of unwanted stagnant water or extracting water from shallow wells

Context in which item is mainly used (e.g. reinforce national system/structures, refugee camps, etc.):

- Used for resolution of localised (stationary) flooding and dewatering of hand-dug wells

Target population (beneficiaries: type and number of persons concerned):

- Determined by context and application

Emergency scenarios where the item should not be used:

- Not to be used in fast flowing water where anchoring in preferred vertical position is difficult

Other Emergency scenario considerations:

- In general high volume low lift application not designed for continuous use

Water tank, collapsible, 1500 ltrs, with distribution kit

UNCCS Code:
369511

General Description:
- Water tank, 1500 litres, collapsible, complete set including kit for water distribution with three taps, connection kit, installation kit and repair kit. Food grade material.

Technical Specifications:
- Water tank, collapsible, 1.5 cbm (1500 litres), made from polyester and coated with PVC, UV proof, thermal stability -30º/+70ºC, suitable for chlorinated drinking water storage (food grade material).

Material:
- Mildew and rot resistant.
- Ultra violet resistant.
- Opaque - to inhibit algae growth.
- Assembly: Heat welding/high frequency welding.
- Weight: 930 g/m² as per DIN 53352 (or equivalent EN/ASTM standard).
- Tensile strength: 5075 (W)/5075 (F) N/5 cm as per DIN 53363 ISO 1421 (or equivalent EN/ASTM standard).
- Tear strength: 700 (W)/630 (F) N/5 cm as per DIN 53354 (or equivalent EN/ASTM standard).
- Adhesion: Bigger than 100 N/5 cm as per DIN 53530 (or equivalent EN/ASTM standard).
- Flame retardancy: None.
- Temperature resistance: -30ºC/+70ºC.
- Base fabric (substrate): Bi-composite polyester or equivalent material, weight 250 g/m² as per DIN 53365 (or equivalent ASTM standard).
- Threads per cm: 16 x 16, as per DIN 53853 (or equivalent ASTM standard).
- Outer coating: Abrasion and UV-resistant fabric such as PVC, weight 480 g/m².
- Inner coating: Black polyurethane, PVC or equivalent coating able to withstand, without alteration of the stored drinking water, chlorine concentration of 0.5 mg/litre at a water temperature of 35ºC, and peak chlorine concentration of 5 mg/litre during cleaning process. Weight 200 g/m². Expected life time minimum three years as to chlorine and UV resistance.

Reinforcements:
- Water tank corners to be fitted with aluminium or plastic flanges. Water tank inlet/outlet to be reinforced with a double layer of fabric.

Ports:
- 1 x 100 mm (4") top threaded flanged port with PVC or polypropylene lid and retaining strap, useful for the introduction of water treatment chemicals or for periodic cleaning purposes.
- 2 x 50 mm (2") diameter male threaded bolted flange ports, made of stainless steel, polypropylene or PVC, one port at each end of the water tank (for filling/inlet and discharging/outlet purposes). The ports are to remain horizontal once the tank is filled with water, and both equipped with a ball valve (as per below connection accessories).

THE COLLAPSIBLE WATER TANK KIT INCLUDES FOLLOWING:

Ground cover:
- Plastic sheet, minimum thickness 0.5 mm, must protrude over the 4 sides of the water tank by not less than 50 cm.

Connection accessories:
2 x 50 mm diameter female threaded brass or PVC valves, for connection to water tank inlet/outlet 2 x 50 mm diameter Guillemin or Storz couplings for quick connection to ball valve, one set of sealing compounds (one hank of hemp or four teflon rolls (12 mm x 12 m), two spanners for Guillemin couplings.

Water tank, collapsible, 1500 ltrs, with distribution kit

Contd...

CONNECTION KIT

To be used for connecting the water tank to the tap stand.

Supplied with:

- 1 x Length of 6 meter semi rigid hose, for the conveyance of water.
- 1 x Plasticized PVC abrasion resistant hose, ozone and weather resistant, smooth bore, fitted with a shock resistant rigid PVC spiral, 50 mm diameter, each end fitted with 2 x 50 mm Guillemin couplings.
- Collars.
- 1 x Disposable spanner for tightening of collars.
- 2 x Spanners for Guillemin couplings.

Repair Set:

- 1 x repair set including one tube of glue, one set of patches, one piece of sandpaper, and instructions for small repairs.
- Instructions for cleaning procedures also included.

WATER DISTRIBUTION KIT (THREE (3) TAPS)

- Water distribution kit to be used with collapsible water tank above. The kit must be made of hot dip galvanized iron steel, threaded as per ISO 7 (the thread cutting oil must be non toxic type), and must be able to withstand rough handling during use.

Supplied with:

- 4 x sturdy legs ("A"frame), each leg fitted with a drilled plate for holding down purposes.
- 1 x 1½" (40 mm) male threaded riser pipe.
- 1 x female threaded 2"-1½" (50 mm-40 mm) junction tee with closing cap.
- 2 x male threaded Guillemin or Storz couplings.
- 1 x central distribution pipe
- 3 x male threaded tap pipes welded to the central distribution pipe.
- 4 x female threaded 3/4" (20 mm) self-closing taps.
- 2 x 3/4" (20 mm) female threaded caps (for closing in case of repair of faulty taps).
- 4 x rolls of teflon tape (12 mm x 12 meters each).
- Minimum discharge rate per tap: 10 liters per minute at one meter head, operation range: Up to 4 bars.
- 4 x plated pegs for fixing down of the tapstand, in length of 30 cm, minimum diameter 12 mm.
- 1 x piece of wire netting for concrete slab, 0.9 meter x 1.5 meters each.

INSTALLATION TOOL KIT

Supplied with:

- 2 x Pickaxes.
- 2 x Spades.
- 1 x Roll Barrier tape (500 m roll).
- 1 x Roll rope 6 mm - blue polypropylene x 50 m.
- 1 x Spirit level 60 cm.
- 2 x Spare Guillemin or Storz couplings
- 2 x Stillson wrench (for riser pipe, leg and tap assembly).
- 1 x Hank of hemp (200 g).
- 1 x Tube/can of alimentary grease (400 g).

Water tank, collapsible, 1500 ltrs, with distribution kit

Contd...

Transport and storage:
- Cold chain: No
- Dangerous good: No
- Batch managed: No
- Shelf life: No

Packaging:
- Collapsible tank is folded, packed in a sturdy polyethylene bag and placed in a strong wooden box.
- Packed dimensions: 1.0 x 0.9 x 0.13 m.
  estimated weight: 25 kg
  estimated volume: 0.120 cbm

Instruction for use (prescription, quantity per person, etc.):
- Suitable for use in static settings. When fully assembled, the tank serves as a potable water reservoir, especially useful in emergency situations.

Precondition for utilisation:
- Fitting requires minimal training or orientation
- Needs suitable flat level platform for installation

Emergency scenarios:
- Use in all kinds of emergencies

Context in which item is mainly used (e.g. reinforce national system/structures, refugee camps, etc.):
- Useful multipurpose unit for storage and transport of water supplies before and after treatment where existing storage facilities and water reticulation systems have either been rendered inoperable or are non-existent. Common use includes localised camp or neighbourhood water distribution support

Target population (beneficiaries: type and number of persons concerned):
- Approximately 300 people per tank, depending on the refilling frequency.

Emergency scenarios where the item should not be used:
- Not suited for use in batch flocculation of raw water

Other Emergency scenario considerations:
- Ground installation is susceptible to damage and filling can be awkward Restricted access and protective fencing highly recommended

Country considerations
- Climate considerations: May require protective measures in extreme climates from sun and cold

Water tank, collapsible, 10000 ltrs with distribution kit

UNCCS Code:
369511

General Description:
- Water tank, 10000 litres, collapsible, suitable for drinking water storage, complete set including 2 water distribution kits with 2 x 6 taps, connection kit, installation kit and repair kit. Food grade material.

Technical Specifications:
- Water tank, collapsible, 10 cbm (10,000 litres), made from polyester and coated with PVC, UV proof, thermal stability -30°/+70°C, suitable for chlorinated drinking water storage (food grade material).

Material:
- Mildew and rot resistant. Ultra violet resistant.
- Opaque - to inhibit algae growth.
- Assembly: Heat welding/high frequency welding.
- Weight: 930 g/m² as per DIN 53352 (or equivalent EN/ASTM standard).
- Tensile strength: 5075 (W)/5075 (F) N/5 cm as per DIN 53363 ISO 1421 (or equivalent EN/ASTM standard).
- Tear strength: 700 (W)/630 (F) N/5 cm as per DIN 53354 (or equivalent EN/ASTM standard).
- Adhesion: Bigger than 100 N/5 cm as per DIN 53530 (or equivalent EN/ASTM standard).
- Flame retardancy: None.
- Temperature resistance: -30ºC/+70ºC.
- Base fabric (substrate): Bi-composite polyester or equivalent material, weight 250 g/m² as per DIN 53365 (or equivalent ASTM standard).
- Threads per cm: 16 x 16, as per DIN 53853 (or equivalent ASTM standard).
- Outer coating: Abrasion and UV-resistant fabric such as PVC, weight 480 g/m².
- Inner coating: Black polyurethane, PVC or equivalent coating able to withstand, without alteration of the stored drinking water, chlorine concentration of 0.5 mg/litre at a water temperature of 35ºC, and peak chlorine concentration of 5 mg/litre during cleaning process. Weight 200 g/m². Expected life time minimum three years as to chlorine and UV resistance.

Reinforcements:
- Water tank corners to be fitted with aluminium or plastic flanges. Water tank inlet/outlet to be reinforced with a double layer of fabric.

Ports:
- On the upper surface: 1 x 100 mm (4") top threaded flanged port with PVC or polypropylene lid and retaining strap, useful for the introduction of water treatment chemicals or for periodic cleaning purposes. At the ends: 2 x 50 mm (2") diameter male threaded bolted flange ports, made of stainless steel, polypropylene or PVC, one port at each end of the water tank (for filling/inlet and discharging/outlet purposes). The ports are to remain horizontal once the tank is filled with water, and both equipped with a ball valve (as per below connection accessories).

THE COLLAPSIBLE WATER TANK KIT INCLUDES FOLLOWING:

Ground cover:
- Plastic sheet, minimum thickness 0.5 mm, must protrude over the 4 sides of the water tank by not less than 50 cm.

Connection accessories:
- 2 x 50 mm diameter female threaded brass or PVC valves, for connection to water tank inlet/outlet 2 x 50 mm diameter Guillemin or Storz couplings for quick connection to ball valve, one set of sealing compounds (one hank of hemp or four teflon rolls (12 mm x 12 m), two spanners for Guillemin couplings.

Water tank, collapsible, 10000 ltrs with distribution kit

Contd...

CONNECTION KIT
- To be used for connecting the water tank to the tap stand.

Supplied with:
- 1 x Length of 6 meter semi rigid hose, for the conveyance of water.
- 1 x Plasticized PVC abrasion resistant hose, ozone and weather resistant, smooth bore, fitted with a shock resistant rigid PVC spiral, 50 mm diameter, each end fitted with 2 x 50 mm Guillemin couplings.

Collars:
- 1 x Disposable spanner for tightening of collars.
- 2 x Spanners for Guillemin couplings.

Repair Set:
- 1 x repair set including one tube of glue, one set of patches, one piece of sandpaper, and instructions for small repairs.
- Instructions for cleaning procedures also included.
- 2 x WATER DISTRIBUTION KIT (2 x 6 TAPS)
  Water distribution kit to be used with collapsible water tank above. The kit must be made of hot dip galvanized iron steel, threaded as per ISO 7 (the thread cutting oil must be non toxic type), and must be able to withstand rough handling during use.

Each tap stand supplied with:
- 4 x sturdy legs ("A" frame), each leg fitted with a drilled plate for holding down purposes.
- 1 x 1½" (40 mm) male threaded riser pipe.
- 1 x female threaded 2"-1½" (50 mm-40 mm) junction tee with closing cap.
- 2 x male threaded Guillemin or Storz couplings.
- 1 x central distribution pipe
- 3 x male threaded tap pipes welded to the central distribution pipe.
- 4 x female threaded 3/4" (20 mm) self-closing taps.
- 2 x 3/4" (20 mm) female threaded caps (for closing in case of repair of faulty taps).
- 4 x rolls of teflon tape (12 mm x 12 meters each).
- Minimum discharge rate per tap: 10 liters per minute at one meter head, operation range: Up to 4 bars.
- 4 x plated pegs for fixing down of the tapstand, in length of 30 cm, minimum diameter 12 mm.
- 1 x piece of wire netting for concrete slab, 0.9 meter x 1.5 meters each.

INSTALLATION TOOL KIT

Supplied with:
- 2 x Pickaxes.
- 2 x Spades.
- 1 x Roll Barrier tape (500 m roll).
- 1 x Roll rope 6 mm - blue polypropylene x 50 m.
- 1 x Spirit level 60 cm.
- 2 x Spare Guillemin or Storz couplings
- 2 x Stillson wrench (for riser pipe, leg and tap assembly).
- 1 x Hank of hemp (200 g).
- 1 x Tube/can of alimentary grease (400 g).

Water tank, collapsible, 10000 ltrs with distribution kit

Contd...

Transport and storage:

- Cold chain: No
- Dangerous good: No
- Batch managed: No
- Shelf life: No

Packaging:

- Collapsible tank is folded, packed in a sturdy polyethylene bag and placed in a strong wooden box.
- Packed dimensions:- 1.2 x 1.2 x 0.4 m.
  - estimated weight: 176 kg
  - estimated volume: 0.576 cbm

Instruction for use (prescription, quantity per person, etc.):

- Suitable for use in static settings. When fully assembled, the tank serves as a potable water reservoir, especially useful in emergency situations.

Precondition for utilisation:

- Fitting requires minimal training or orientation Needs suitable flat level platform for installation

Emergency scenarios

- Large scale emergency

Context in which item is mainly used (e.g. reinforce national system/structures, refugee camps, etc.):

- Useful multipurpose unit for storage and transport of water supplies before and after treatment where existing storage facilities and water reticulation systems have either been rendered inoperable or are non-existent.

  Common use includes localised camp or neighbourhood water distribution support

Target population (beneficiaries: type and number of persons concerned):

- Approximately 2000 people per tank, depending on the refilling frequency.

Emergency scenarios where the item should not be used:

- Not suited for use in batch flocculation of raw water

Other Emergency scenario considerations:

- Ground installation is susceptible to damage and filling can be awkward Restricted access and protective fencing highly recommended

Climate considerations:

- May require protective measures in extreme climates from sun and cold

Water Purification Unit, skid, 5 m³ hr@20 mTMH. DIESEL/PETROL

UNCCS Code:
439424

General Description:

- Water purification unit, skid mounted with a capacity of 5 cubic meters per hour at 20 m (TMH) Total Manometric Head. Diesel/Petrol operated generator.

Technical Specifications:

- The unit is designed to purify 5 cubic meters per hour at 20 meters TMH of surface water from rivers, lakes or shallow wells having maximum turbidity of 20 (N.T.U.) Nephelometric Turbidity Units. The unit is capable of producing drinking water free of the physical and bacteriological contaminations according to the latest WHO recommendations for drinking water. The unit will not take care of industrial contamination, such as hydrocarbons, chemical waste, etc. All material used in the unit that are in contact with water must be certified and approved for use with drinking water.

Power System:
The purification unit is of autonomous operation. This is provided either by means of one (or two) diesel driven motor pump(s), or by means of a suitable power generator, diesel/petrol operated, air cooled. In any of the cases, the required power means must be supplied with the unit. If the system is operated through a genset, the operations of the unit are controlled by a robust control panel including the start/stop switches and all the controls and metering.

The system is Supplied with:

- 20 meters flat drinking water hose for connecting the unit to a water tank, with the required quick couplings.
- Chemicals for minimum three months of operation.
- A set of spare parts needed for all the parts including the generator and/or pump(s) sufficient for 2000 hours of normal operation. A set of tools for the operator as needed for the normal operation and maintenance.
- Operating manuals in (English, French, Spanish and Arabic).

NOTE: The unit could be mounted on a two-axle trailer suitable for moving on rough terrain. Such requirement should be clearly specified when ordering; else it is supplied on skid.

The system does NOT contain:

- 2 x Collapsible water storage tanks of 10000 litres capacity. If required, such Water Bladders 10000 liters can be ordered. Each of the two pillow tank kits will include tap stand distribution kit.

The following steps are followed in the water treatment process:

1. Surface water intake: Floating raw water suction by means of an electrical submersible pump or by a diesel driven motor pump with adequate suction hose, inlet strainer of less than 2 mm openings, and a feed hose up to the treatment unit.
2. Pre-chlorination by Calcium Hypochlorite; this includes the tanks and equipment for the preparation of the solution and/or dosing of the predetermined amount of Chlorine.
3. Coagulation by Aluminium Sulphate; this includes the containers and equipment for the preparation of the solution and/or dosing of the predetermined amount of Alum.Sulph.
4. Flocculation; a flocculation unit allowing sufficient contact time for adequate creation of flocs for sedimentation or filtration.

   NOTE: Sedimentation; this compartment is not included in the basic treatment unit. To be ordered, if desired (see below).
5. Filtration; this includes a sand filter and an activated carbon filter. The filters are complete with all the (automatic) back wash piping, valves, manometers and controls. A micro filter might potentially be included as an optional.

Water Purification Unit, skid, 5 m³ hr@20 mTMH. DIESEL/PETROL

Contd...

6. Disinfection; by Chlorination. A dose of residual Chlorine is added to guard against subsequent contamination during storage, for chemical shipping reasons preferably by NaDCC instead of Calcium Hypochlorite HTH.

SEDIMENTATION:
If sedimentation/settlement of flocks must be processed, an ADDITIONAL water reservoir (settlement compartment) should be ordered. Should allow for a contact time of about one hour for the chemicals to react and the solids to settle. The sedimentation chamber should have all the facilities for the periodic removal of the sediments as well as passing the clarified water to the next stage of treatment.

Transport and Storage:
- Cold chain: No
- Dangerous good: No
- Batch managed: No
- Shelf life: No

Packaging:
- The unit is packed in wooden boxes on the skid or the trailer as the option selected.
  - estimated weight: 1200 kg
  - estimated volume: 20 cbm
  - estimated dimensions: 2200 x 2200 x 4000 mm

Storage: Store in a dry and well ventilated room

Instruction for use (prescription, quantity per person, etc.):
- The unit is used for providing drinking water for about 5,000 residents or displaced population in cases of emergency where the source is surface water having not more than 20 NTU. In the water treatment process, these steps have to be followed:
  1. Raw water suction and straining; by submersible pump or by motor pump complete with the suction hose, and inlet strainer of approximately 2 mm openings.
  2. Pre-chlorination by Calcium Hypochlorite or NaDCC.
  3. Coagulation/flocculation by Aluminium Sulphate.
  4. Sedimentation is optional; sedimentation chamber must be ordered clearly with the order if required. Would have all the facilities for the periodic removal of the sediments as well as passing the clarified water to the next stage of treatment. Can also be added to the system later.
  5. Filtration; by a sand filter and an activated carbon filter.
  6. Back washing; a back washing system is integrated in the system.
  7. Disinfection; by Chlorination. a dose of residual Chlorine is added to guard against subsequent contamination during storage.

Precondition for utilisation:
- Requires physical access
- Training of dedicated staff on Operation
- Access to consumables (e.g. chlorine and aluminium sulphate)
- Access to raw water supply and connection to adequate storage facility for treated water
- Access to fuel and spares

Water Purification Unit, skid, 5 m³ hr@20 mTMH. DIESEL/PETROL

Contd...

Complementary Requirements, to be ordered/procured separately:
- WATER BLADDERS OF 10,000 LITERS (Requirement x 2 kits)
- Aluminium sulphate gran 17-18%
- Calcium hypochlorite 65-70%
- Portable Bacteriological Field test kit 1
- Additional hoses

Emergency scenarios
- Primary use for static populations where quality of drinking water is considered high risk

Context in which item is mainly used (e.g. reinforce national system/structures, refugee camps, etc.):
- Used to augment or replace mass treatment systems for piped supplies
- Used for production of safe water for camp settings
- Safe water distribution by tankers to disbursed population

Target population (beneficiaries: type and number of persons concerned):
- 5000 persons per unit

Emergency scenarios where the item should not be used:
- Rapidly moving disbursed populations unless complemented distribution system in place to deliver safe water cost efficiently.

Other Emergency scenario considerations:
- Dedicated and trained operational staff required
- Risk of contamination of water supplies centralised and water quality should be regularly checked and monitored
- Best deployed with water storage tank (need to be ordered separately)

Climate considerations:
- Climatic extremes might complicate use.
- Care of combustion engines and other moving equipment needs to be adapted to conditions

Other country specific considerations:
- Language of operating instructions.

Water tank, collapsible for trucking, 6m³

UNCCS Code:
369561

General Description:
- Water tank (bladder), 6000 litres (6 cbm), collapsible for water trucking, made of food grade material.

Technical Specifications:
- Collapsible (flexible) water tank (bladder) manufactured from UV resistant, food grade PVC coated polyester fabric (minimum 1100 g/m²), fitted with inlet and cap on top of the tank. All materials used should be suitable for use with chlorinated drinking water.
- This bladder tank should be specifically designed for use on trucks for water transport.
- Dimensions of the tank: 4m long, 2.2 m wide and 0.65 m high (maximum 6 tons capacity).

Material for the tank:
- Mildew and rot resistant Opaque, to inhibit algae growth.
- Weight: 1100 g/m². Temperature resistance: -30ºC/+70ºC.

Assembly:	Heat welding/high frequency welding.
Base fabric (substrate):	Bi-composite polyester or equivalent material.
Outer coating:	Abrasion and UV-resistant fabric such as PVC, weight minimum 480 g/m².
Inner coating:	Black polyurethane, PVC or equivalent coating able to withstand, without alteration of the stored drinking water, chlorine concentration of 0.5 mg/litre at a water temperature of 35ºC, and peak chlorine concentration of 5 mg/litre during cleaning process. Weight minimum 200 g/m².

The tank is supplied with:
- 5 x Heavy duty 50 mm polyester webbing with becketed eye loops and 2 x 50 mm heavy duty webbing straps (two each end) with becketed eye loops for securing basis - 14 per unit. Including adjustable holding down straps.
- 2 x Overpressure relief valves (2 psi) automatic c/w rubber attached plug.
- 1 x 4" (internal measurement) screwed filler cap with captive cord
- 2 x 3" BSP male stub fitting (both at the same end) manufactured from LM25 aluminium with anti chafe patch and naps.
- Each external stub shall be fitted with type 55-3" BSP female gate valve PN16 Giacomini type.
- 2 x 3" (M) to 2" (M) reducers BSP, plastic
- 2 x 2" BSP equal 'T' (F), plastic
- 4 x 2" (M) to 1" (F) reducers, plastic
- 4 x 1" (M) hose tail connector, plastic
- 4 x 3 m lengths of 1" flexible hose pipe, to fit over hose tail connectors
- 2 x Anti chafe patches and covers
- 1 x Ground sheet
- 1 x Repair kit
- 1 x Set of instructions
- 1 x Holdall

Transport and Storage:
- Cold chain: No
- Dangerous good: No
- Batch managed: No
- Shelf life: No

Water tank, collapsible for trucking, 6 m³

Contd...

Packaging:
All items to be packed in one sturdy plywood case securely strapped and sealed, suitable for sea and air freight, clearly marked with the gross weight and dimensions. Marks shall be on the front and back of the case, as determined by the runners of the forklift.

Instruction for use (prescription, quantity per person, etc.):
- Suitable for use in either static setting or for mounting in a suitable flat truck with adequate padding and strapping
- The bladder shall be loosely tied down before filling; it shall be filled with a pump using a 3" inlet.
- An inlet at the top is provided to add chlorine.
- Fittings have been included to make up a manifold arrangement so that water can be supplied directly from the back of the truck via 4 lines of 1" hose where this is required.

Precondition for utilisation:
- Fitting requires minimal training or orientation
- Filling and offloading requires either accompanying pumping equipment and or gravity filling system
- Often requires connection to distribution networks
- Needs suitable flat level platform for installation

Emergency scenarios : All kinds of emergencies

Context in which item is mainly used (e.g. reinforce national system/structures, refugee camps, etc.):
- Useful multipurpose unit for storage and transport of water supplies before and after treatment where existing storage facilities and water reticulation systems have either been rendered inoperable or are non-existent. Common use includes localised camp or neighbourhood water distribution support

Target population (beneficiaries: type and number of persons concerned):
- Approximately 1200 people per tank. Depends on refilling frequency.

Emergency scenarios where the item should not be used:
- Not suited for use in batch flocculation of raw water.

Other Emergency scenario considerations:
- Ground installation is susceptible to damage and filling can be awkward
- Restricted access and protective fencing highly recommended

Climate considerations:
- May require protective measures in extreme climates from sun and cold

Water tank, Onion Shaped collapsible, 30 m³, with taps

UNCCS Code:
369560

General Description:
- Water tank 30,000 litres, flexible, "Onion Shaped" self supporting open topped with a cover, made from food-grade material suitable for storage and chlorination of potable water. Includes 4 water distribution kits with 6 taps each.

Technical Specifications:
- Flexible, "Onion Shaped" tank, self supporting manufactured from food-grade quality PVC coated polyester fabric (weight not less than 1100 g/m^2). Liner shall be resistant, anti UV, preferable yellow or blue colour and the interior in polyurethane. Tensile strength of material should not be less than 550 kg/m^2. Minimum thickness is 1.15 mm. All seams to be heat or high frequency welded. Dimensions: 5.5 m base diameter, 4.6 m top diameter and 1.5 m high.

The tank is supplied with:
- 2 x 3" male external stubs opposite each other, fitting manufactured from Aluminium (LM25 Grade) or equivalent.
- 2 x 3" female internal stubs fitted back to back with item 1. Stubs shall be manufactured from Aluminium (LM25 Grade).
- Anti-chafe patches and flaps PVC.
- 2 x Each external stub shall be fitted with 3" BSP female gate valve PN16, like type R55 Giacomini or equivalent brand and type.
- 2 x Extra stub patches
- 1 x Cover, food quality PVC with fixing hasps (preferably with integrated central floating block).
- 1 x Ground sheet (weight not less than 610 g/m^2, circular and diameter 6.50 m)
- 1 x Holdall
- 2 x 3"(M) x 1" (F) BSP Hex reducing bush, GI
- 1 x 1"(M)BSP to 32 mm coupler for MDPE tube
- 1 x 32 mm equal T compression coupling for MDPE tube
- 1 x Repair kit
- 1 x Set of instructions (manual)
- 2 x Water distribution kits: The tank kit includes in total 4 water distribution kits with 6 taps (2 kits x 2 stands w/6 taps, complete with connection kits etc.)

Packaging:
- All items to be packed in one sturdy plywood case securely strapped and sealed, suitable for sea and air freight, clearly marked with the gross weight and dimensions. Marks shall be on the front and back of the case, as determined by the runners of the forklift.

Instruction for use (prescription, quantity per person, etc.):
- For use in static setting
- The tank is suitable for water storage, distribution and chlorination and the cover help to prevent evaporation and contamination. The tank cannot be used for transportation.
- The tank should be installed on an even, stable and horizontal earth platform at least 1.5 m above ground level or higher if possible. When the tank is installed on an earth embankment, the slopes of the embankment should be protected from erosion with dense grass, stones or plastic. The water distribution tap stand should be installed reasonably away from the tank with proper drainage arrangement to protect the embankment.
- The area surrounding the tank should preferably be fenced. The tank shall be protected from direct sunshine as much as possible.
- The tank shall be thoroughly cleaned and dried before folding it for transportation or storage.

Water tank, Onion Shaped collapsible, 30 m³, with taps

Contd...

Precondition for utilisation:
- Fitting requires minimal training or orientation
- Needs suitable flat level platform for installation

Emergency scenarios
- Large scale emergencies

Context in which item is mainly used (e.g. reinforce national system/structures, refugee camps, etc.):
- Useful multipurpose unit for storage
- Treatment of water supplies where existing storage facilities and water reticulation systems have either been rendered inoperable or are non-existent
- Common use includes large localised camps or neighbourhood water distribution support

Target population (beneficiaries: type and number of persons concerned): 6000 beneficiaries per tank

Emergency scenarios where the item should not be used:
- Given open top design these tanks are suited for use in batch flocculation and chlorination of raw water

Other Emergency scenario considerations:
- Ground installation is susceptible to damage and filling can be awkward/restricted access and protective fencing highly recommended

Climate considerations:
- May require protection from extreme temperature and sun. Due to open top structure, might need covering in circumstances of wind-blown contaminants (sand/dust)

Electrical Submersible Pump for Boreholes, 18 cbm/hr@80 m TMH

UNCCS Code:
432236

General Description:

- Electrical submersible pump, for boreholes, with a capacity of 18 m^3/hr at 80 m Total Manometric Head.
- The unit is used for pumping non-aggressive water without solid particles from boreholes, or similar water sources (stationary or slow moving water only)

Technical Specifications:

- Complete Electrical submersible borehole pump, for pumping non-aggressive water without solid particles, all materials approved for use with drinking water. The pump is provided with a priming screw, top non-return valve, bottom inlet strainer and water lubricated bearings.
- The standard pump is directly coupled and equipped with a 3-phase submersible motor, suitable for power supply of 380 V/400 V - 50 Hz - 3-phase. The motor is expected to be of maximum 7.5 kW. The embedded stator winding in the submersible motor is hermetically enclosed in stainless steel. Enclosure class IP 58. Built-in protection device dry running, including level relay electrodes. Complete with motor cable. Pump and motor are supplied with body and shaft, impeller/diffuser assemblies all parts in AISI 304 (DIN 14301) stainless steel, water lubricated bearings in Noril glass fiber impregnated thermoplastic resin/stainless steel, and complete with electric cabling.
- Pump size: The pump must be able to fit and work correctly in borehole casing of not more than 6 inches (150 mm inside diameter).

Supplied with:

- 1 x 100 m meters of electrical (drop) cable, submersible, water tight to at least 3 bar and approved for use with drinking water
- 1 x kit, cable termination for cable jointing to pump, two component type (not shrinkable).
- Sufficient sets of cable clips (one every 3 m).
- 1 x set of electrodes.
- 1 x electrode cable, 1 x 1.5 mm^2, installation length according to drop cable length.
- 1 x starter, reduced start current by auto-transformer or soft, 3 x 380-415 V kit in control panel. W/ammeter, voltmeter and electrode relay, time delay relay and earth leakage system
- 1 x protection device, dry running, including level relay electrode sets.
- 1 x well head, galvanized, with base plate and complete with cable gland for power and electrode cables, threaded hole with plug for dip meter, pressure gauge, gate valve and elbow 90°.
- Set of stainless steel couplings for 2" flexible riser hose, i.e. for connection of hose to the pump, and for connection of hose to the well head.
- 1 x Standard tool kit.
- 1 x spare parts kit/Service kit, sufficient for 2 years of operation. Instruction, operations and maintenance manual
- 1 x set of flexible RISER PIPES - TO BE SUPPLIED as roll of lay flat
- Flexible Hose for use with borehole pumps. Supplied in standard coil length of minimum 75 meters, with the appropriate diameter for the actual pump outlet and capacity - Hose set or meter unit price to be quoted clearly.

All parts in contact with the water must be of materials approved for contact with drinking water. Certificates must be available.

The heavy duty Flexible Hose is made of reinforced polyester and thermoplastic elastomer composite (like e.g. Wellmaster, Foraduc, Flexwell etc. etc.), complete with above indicated two separate threaded stainless steel couplings (ISO-Fix or equivalent type) for connection to the submersible pump outlet and to the well head. If already mounted, at least one of the couplings must allow an easy and secure adaption of the hose length to the actual installation conditions. The flexible hose will also be supplied with a Hose-Roller for

Electrical Submersible Pump for Boreholes, 18cbm/hr@80 m TMH

Contd...

installation/pulling out of borehole pump. The submersible pump or the flexible riser pipe will be supplied prepared for potentially draining the water out of the riser pipe for making the pull out of the borehole pump feasible by human power. This disposition should preferably not empty the riser pipe at each stop of the pumping, to avoid regular twisting of pipe.

Packaging:

- Each pump set is packed individually and complete with it's corresponding accessories, cable lengths etc.
- All the above packed in one timber crate suitable for sea/air freight, lined with Kraft Union paper. Base timbers have minimum of 4" fork lift runners suitable for offloading by jack/poles etc. Case is to be finished with a minimum of 2 steel bands. Pump serial number and purchase order number to be clearly marked on case.

  Crate outer to be marked "Electric pump boreholes" with overall dimensions in CMS and gross weight in KG clearly shown. Marks to be both on the front and back determined by the fork lift runners.

  – estimated weight: 110 kg
  – estimated volume: 0.55 m^3

Precondition for utilisation:

- Trained and or experienced staff for installation
- Trained staff for operation
- Required access to reliable and appropriate power supply
- Requires suitable location for mounting of control panel and switching gear with restricted access

Complementary Requirements, to be ordered/procured separately:

- In situations where there is no electric power supply or frequent power cuts are experienced, it is recommended to order a generating set to match the specification of the pump. The generating set must be of sufficient capacity to provide the start current required for above, i.e. with Auto-Transformer starter a generating set of at least 15 to 20 kVA (internally regulated type, altitude max 1000 meters, 100% humidity and max 40 degr.C ambient). For the above pump, the starting is supposed to be Auto-Transformer. D.O.L.(Direct-On-Line) can be used, but will require about 25% higher start current from the power source. Field office must clearly specify if a different voltage and phase rating of pump motor is required; as well as, different length and rating of electrical cable (length should be enough to meet the submerged pump well depth and any surface cabling requirements), connectors, fittings, switch gear and generator if needed etc. While ordering pump kit it should be noted that this size of pump might have the possibility of applying 4" and slim 6" diameter motors. Both will normally suit a 6" borehole casing. Should the borehole diameter be inferior to 6", then Field Office must specify the actual maximum diameter of the borehole.

Emergency scenarios

- Type of emergency: All kinds of emergencies

Context in which item is mainly used (e.g. reinforce national system/structures, refugee camps, etc.):

- Augmenting of existing/damaged or otherwise absent water supplies used to pump clean water from open sources to treatment or storage tanks used to pump safe water from protected sources to reticulation and or other distribution systems

Target population (beneficiaries: type and number of persons concerned):

- Determined by context and application

Electrical Submersible Pump for Boreholes, 18 cbm/hr@80 m TMH

Contd...

Emergency scenarios where the item should not be used:

- Not for use in fast flowing water where anchoring in preferred vertical position is difficult
- Not to be used in high turbidity and or water containing significant debris

Other Emergency scenario considerations:

- Power supply for pumping can be used for lighting of sanitary facilities at night for protection related considerations

Country considerations:

- Matching specification of electrical supply

Centrifugal Pump 2"/50 mm, Diesel driven

UNCCS Code:
484275

General Description:
- 2" centrifugal pump directly coupled to a diesel engine, supplied with suction and discharge hoses.

Technical Specifications:
- Pump/Engine Set, Comprising 2" x 2" (50 x 50 mm) single stage centrifugal self priming pump. Satisfying performance criteria as per pump curve attached (rel. straight curve going from approx. 43 m^3/hr at 10 m head, through 28 m^3/hr at 20 m head to approx. 8 m^3/hr at 30 m head). Construction is all cast iron with 2 stage mechanical carbon/ceramic seal, stainless steel shaft sleeve, renewable steel wear plate, semi open clog resistant impeller, integral non-return valve, detachable discharge bend, casing clean out cover, prime and drain points and 2" BSP male suction and discharge connections. Pump is driven by a single cylinder 4 stroke air-cooled diesel engine developing at least 4.5 KW at 3600 rpm with recoil start, renewable element air, oil and fuel filters, fuel tank sufficient to hold fuel for 4 hr operation, automatic low oil shut down, throttle control, oil drain tap and exhaust silencer. Pump and engine are close coupled together and mounted on a common fabricated steel base plate. Drilled 4 x holding down bolts. Pump set identification plate secured to base plate with Code 'P2-ALLO/3_Diesel 2" pumpset stamped on it.

Supplied with Connection accessories, comprising:

Suction : The suction side shall include the following:
- 1 x 3" hose, length 30 m, reinforced plastic flexible medium duty, (Green low toxic).
- 1 x 70 mm foot valve with 74 mm hose tail (fitted to the above hose).
- 1 x 3" hose band (fitted to above).
- 1 x 3" BSP (F) hose coupling MI (fitted to above).
- 1 x 3" hose clamp (fitted to above).
- 1 x 3" hose band (fitted to above).
- 1 x 3" (M) to 2"(F) BSP reducer GS.
- 10 x 3" Hose coupling washers.

Discharge: The discharge side shall include the following:
- 1 x 2" BSP (F) gate valve - brass.
- 1 x 3" (M) to 2"(M) BSP nipple GS.
- 1 x 3" hose, 3 m long, transparent PVC medium duty (5 bar).
- 2 x 3" BSP (F) hose coupling MI (fitted to both ends of the hose).
- 2 x 3" hose clamp (fitted to above).
- 5 x 3" BSP hex nipples GS.
- 3 x 3" BSP (F) 90 degree Bend GS.
- 2 x 3" BSP (F) hose coupling MI.
- 2 x 3" hose clamp.
- 10 x 3" hose coupling washers.
- 3 x 10 m roll of PTFE tape (12 mm wide).

Mounting bolts: The mounting bolts shall be as follows:
- 4 x M10 x 100 mm rag bolts, washers and nuts.
- 4 x 3/8" x 3" coach screws and washers.

Pump Spares: The following spares for the pump shall be supplied and should be sufficient for one year of operation:
- 1 x Mechanical seal
- 1 x Gasket set

Centrifugal Pump 2"/50 mm, Diesel driven

Contd...

Engine consumables: The following items of engine consumable spares shall be supplied and should be sufficient for one year of operation:

- 8 x Air filter element
- 8 x Oil filter element
- 8 x 'O' Ring for oil filter
- 8 x Fuel filter element
- 2 x Gasket set

Engine oil

- The supply shall include 5 litre container of engine oil (15W/40) complying to specification API SJ/CF for diesel engines or MIL-L-46152 D/E. Non hazardous for air/sea freight.

Documentation

- User manuals and spare parts lists for the pump and the engine shall be included - as well as an instruction, operating and maintenance manual.

Transport and Storage:

- Cold chain: No
- Dangerous good: No
- Batch managed: No
- Shelf life: No

Packaging:

- All the items shall be packed in a timber crate suitable for sea/air freight, lined with Kraft union paper. Base timbers shall have minimum of 4" fork lift runners suitable for offloading by jack poles etc.
- The pump shall be secured at the floor of the case using steel spreaders with bolts push up, welded to the spreaders to prevent turning. Bolts are fitted with 'Nylock' type nuts.
- The case shall be finished with a minimum of two steel bands.
- Pump serial number and purchase order number to be clearly marked on case.
- Crate outer to be marked (Diesel 2" Pump set) with overall dimensions in CMS and gross weight in KG clearly shown. Marks to be both on the front and back determined by the fork lift runners.

USER NOTE:

- The 5 litres of oil supplied in this kit should be used for running in the engine and discarded after 100 running hours and replaced with SAE 15W/40 lubricating oil (or equivalent) as in the Pump Oil kit.
- This Pump set is part of the Pump Pack and is designed for use in conjunction with the Pump Fittings Kit (Pump Fittings Kit) and the Pump Oil Kit. If required, these must be ordered separately.
- For optimum performance, the pump design is based on using 2" suction/delivery pipe work, although for simplicity 3" pipe work is provided which is the size more commonly used in other water equipment.
- This kit contains all necessary fittings and pipe work to assemble a complete pumping station. A 30 m length of 3" green hose and foot valve are supplied for the suction. In order to maximize pump efficiency the length of suction hose should be kept as short as practical, normally this should be no more than 10 m. A short length of 3" transparent hose is supplied with a gate valve, a non-return valve, and a number of 90 degrees elbows for connection into a 3" pumping main. The pressure rating of the 3" green hose is less than 2 bar, so it should not be used for pump delivery.
- The Pump Fittings Kit when combined with this kit allows additional connections (uses) to be made. A 2" gate valve is included to allow optional throttling at outlet. It can also act as an isolation valve. Pumping against a fully closed valve must be avoided. The valve must always be open during priming. Experience has shown that it is unnecessary to order a Major Repair or Overhaul Kit for every pumpset supplied.

Centrifugal Pump
2"/50 mm, Diesel driven

Contd...

- On sites where a number of pumps are to be deployed, it is suggested that initially one Overhaul Kit be ordered for every five or more pumps supplied. Ultimately, the appropriate quantity of overhaul or specific spares to be ordered must be judged against the actual need and the site conditions such as competence of mechanics, workshop facilities, maintenance and repair practices, duration of project, etc.
- This kit includes sets of consumables and essential spares for minimum one year operation and maintenance of both the engine and the pump, based on operation in fairly unfavorable/dusty site conditions with minimal maintenance support/service. This period can be extended if site conditions are more favorable.

Precondition for utilisation:
- Dedicated operational staff required (including appropriate training on operation)
- Access to fuel and spares needs to match the operational requirements of the setting
- Language of operating instructions

Emergency scenarios
- Specialised equipment to move bulk water

Context in which item is mainly used (e.g. reinforce national system/structures, refugee camps, etc.):
- Used in static settings
- For piped supplies or where filling of tankers required

Target population (beneficiaries: type and number of persons concerned):
- Depending on requirements on ground

Emergency scenarios where the item should not be used:
- Rapidly moving disbursed populations unless complemented distribution system in place to deliver safe water cost efficiently.

Other Emergency scenario considerations:
- Dedicated and trained operational staff required

Country considerations:
- Climate considerations: Climatic extremes might complicate use.
- Care of combustion engines and other moving equipment needs to be adapted to conditions

Other country specific considerations:
- Language of operating instructions.

Portable Bacteriological Field test kit 1

UNCCS Code:
484957

General Description:
- Portable Bacteriological Field test kit 1. Water quality testing kit, type equivalency to basic DELAGUA, portable. Portable kit for basic water quality assessment, for on-site water analyzing.

Technical Specifications:
- This type of lightweight, portable and easy to use kit has originally been designed by the University of Surrey in collaboration with OXFAM to test water quality primarily for bacteriological contamination and to determine its safety for human consumption. It is especially useful in emergency situations where testing and results can be determined quickly so that corrective action may be taken without delay. The portable field testing kit contains a Single Incubator for analysis of Faecal Coliforms at 44°C. It can be calibrated to 37°C for Total Coliform Count. Capacity 16 slim-fit aluminium Petri dishes. The incubator Kit includes 3 sets of 16 slim-fit re-usable aluminium Petri dishes supplied with strap. Membrane filtration unit using 0.45um pore size membrane filters. Separate filter and sample cups, vacuum pump. Bronze discs, gaskets and o-rings. Digital timer, forceps, plastic bottles, hand lens, lubrication grease, spirit thermometer (-10 to +50C x 0.5C).
- Sterilization possible with methanol.

Power options:
- Main AC electricity supply (110V/220V), internal rechargeable and removable DC battery, vehicle cigarette lighter.
- Recharging internal battery possible within one day.
- Internal battery capable of 5 incubation cycles before requiring recharging.

The portable kit also includes following testing equipment:
- Visual Comparator for testing pH, Free and Total Chlorine
- Hand-held digital Conductivity Meter, and
- Turbidity tubes - measuring range 5 to 1000 NTU.
- It is also supplied with a power cable to operate the kit directly from a 12-volt battery or from a vehicle.

Supplied with:
- Consumables for running 200 tests
- For incubator: gridded membranes, growth pads, pad dispenser, culture medium 38.1g tub.
- For comparator: DPD No. 1, DPD No. 3 and Phenol Red tablets.
- Instruction training CD and instruction manual (in English).

Transport and Storage:
- Cold chain: No
- Dangerous good: No
- Batch managed: No
- Shelf life: No

Packaging:
- The kit is packed in Polypropylene case with handle and hinged, lockable lid.
  - estimated weight: 10 kg
  - estimated volume: 14 cdm
  - estimated dimensions: 37 x 14 x 26 cm.

Portable Bacteriological Field test kit 1

Contd...

Instruction for use (prescription, quantity per person, etc.):

- This kit can be used for surveillance and monitoring of water quality at the source, in water storage tanks, in treatment plants, at the consumer level etc. It does not test for heavy metals such as arsenic, chromium, lead, mercury, nickel, or pesticides, insecticides, detergents, organic pollutants, phosphate, sulphate, cyanide, ammonia, radioactivity.

Precondition for utilisation:

- Only for use by trained staff
- Needs static dedicated room for use (not mobile when in use) with limited access and minimal external contamination
- Requires adequate complimentary consumables
- Requires reliable 240VAC power supply (consider small dedicated generator)

The following items are needed to start the bacteriological tests, normally to be provided locally and therefore generally not included in the above kit:

- Pressure cooker or portable sterilizer or access to an autoclave (e.g. in a nearby hospital or laboratory).
- Methanol (at least one Ml/test).
- Distilled water.
- 1 litre measuring cylinder or a beaker.

NOTE: Battery needs charging on monthly basis

Complementary Requirements, to be ordered/procured separately:

- The following items are needed to start the bacteriological tests: Pressure cooker or portable sterilizer or access to an autoclave (e.g. in a nearby hospital or laboratory).
- Methanol (at least one Ml/test).
- Distilled water.
- 1 litre measuring cylinder or a beaker.
- Membrane filters and pads for 1000 tests.
- Free Chlorine test, DPD No. 1, 250 Tab./Pack.
- Combined Chlorine test, DPD No. 3, 250 Tab./Pack.
- Total Chlorine test, DPD No. 4, 250 Tab./Pack
- Additional incubator set at 37°C for the Total Coliform Count in water

Emergency scenarios:

- Useful in all emergencies with drinking water contamination (biological)
- Primary use in monitoring water quality and assisting in identification of sources of water contamination

Context in which item is mainly used (e.g. reinforce national system/structures, refugee camps, etc.):

- Central (static) water testing lab, to which samples are brought for analysis.

Target population (beneficiaries: type and number of persons concerned):

- Ranges from household water storage to urban bulk water system.

Portable Bacteriological Field test kit 1

Contd...

Emergency scenarios where the item should not be used:

- Given that use requires static placement of the unit by trained personnel, deployment is limited to matching circumstances. Time from water to testing point is critical as is collection and handling of sample, suggesting use where some systems and infrastructure exists. Also, this kit does not test for heavy metals such as arsenic, chromium, lead, mercury, nickel, or pesticides, insecticides, detergents, organic pollutants, phosphate, sulphate, cyanide, ammonia, radioactivity.

Other Emergency scenario considerations:

- Time between sampling and testing plus stability of incubation must be adequately managed.

Country considerations:

- Cultural considerations: Transparency of activities occasionally sensitive
- Climate considerations: Samples en-route to testing need to be kept at appropriate temperature
- Other country specific considerations: Voltage and access to power supply

Water Container, PVC/PE 10 ltrs, collapsible

UNCCS Code:
369423

General Description:
- Collapsible water container, with a capacity of 10 litres, can withstand a 1.8 meter drop test when full, made from food grade material, without logo.

Technical Specifications:
- Collapsible container, 10 liters capacity, made of PVC coated polyester fabric, polyethylene, or equivalent material.
- UV resistant, can withstand ambient temperatures of -20°C to +50°C.
- Suitable for drinking water storage, tested and approved by recognized and specialized laboratories.

Fitted with:
- Carrying handle, minimum 9 cm long and 3 cm high, with no sharp edges. An opening of at least 30 mm diameter, with a matching screw cap for filling/discharge.
- The screw cap should be held with a retaining strap.

Cleaning instructions should be provided with each box of containers.

Drop test:
- When filled with water at 20°C, the container must be able to withstand a 1.8 meter drop on a hard surface.
- The test will be considered successful if no leakage is observed after the drop.
- The height of the drop will be measured from the ground level to the bottom of the container.
- The bidders will be requested to send samples for test purposes.

Design life:
- Minimum 6 months of use under tropical conditions.

Markings:
- NEUTRAL: No name or logo must be marked or engraved on the container.

Packaging:
- The containers are packed in export cartons, containing 100 pieces each.
  Shipping details:
  1 x 20' = 6600 pcs
  1 x 40' = 15000 pcs

Instruction for use (prescription, quantity per person, etc.):
- The item is used for transport and storage of potable water, especially for domestic use in emergency

Emergency scenarios:
- Any kind of emergency

Context in which item is mainly used (e.g. reinforce national system/structures, refugee camps, etc.):
- Support of displaced populations
- Household water storage options lost or destroyed
- Water supplies are intermittent and increased storage is required

Target population (beneficiaries: type and number of persons concerned):
- Households/Families (2 containers per family)

Emergency scenarios where the item should not be used:
- No distribution where Basic family water kit for 10 families or similar product have been distributed

Squatting plate
Plastic, w/o pan 120 x 80 cm

UNCCS Code:
369393

General Description:
- Squatting plate, plastic, without pan, 120 x 80 cm, for emergency situations.

Technical Specifications:
- Self supporting plastic direct-drop squatting plate with foot rests, prepared for water-seal installation, molded in LLDPE, with an attached, preferably hinged, keyhole cover molded in HDPE. Materials could differ, but to be plastic based to provide light weight, sturdy and easy cleanable slabs.
- The upper side will have a slight slope towards the center of the plate to facilitate cleaning and hygiene.
- The drop hole of key-hole shape must be dimensioned to avoid a small child to pass through.
- Additional reinforcement can be provided by means of a metal insert embedded in the plastic, by strong honey comb structure, or by other long term reliable means. The squatting plate must be able to securely support a weight of minimum 150 kgs at the center with the two extreme ends laying off on maximum 100 mm of firm support each, considering also tropical ambient temperatures and direct sunshine. Holes are provided on the extreme four corners of the squatting plate through which the four provided tent pegs can be inserted with water-tight fit. These metal tent pegs of dimensions 8 mm x 275 mm are included in this scope of supply. An arrangement for their storage is suggested being provided on the underside of the squatting plate. Slots for storage of the tent pegs are provided on the underside of the squatting plate. An arrangement is provided on the underside of the squatting plate to enable fastening of a pan/bowl and water-seal trap if required. This fastening can be by bolting or other secure principle. Length 1200 mm, width 800 mm, thickness 55 mm (or thickness as appropriate for an optimized number of plates on a standard Euro pallet, while respecting the plate strength criteria) Weight including cover 11.5 kg.

NOTE: No digging tools included.

Transport and Storage:
- Cold chain: No
- Dangerous good: No
- Batch managed: No
- Shelf life: No
- Packaging:
  - estimated weight: 11.5 kg
  - estimated volume: 0.053 cdm
  - estimated dimensions: 120 x 80 x 5.5 cm
- Shipping details: 40 squatting plates are stacked on a standard Euro pallet (80 x 120 cm).

Instruction for use (prescription, quantity per person, etc.):
- The squatting plate can be used on trenches or pits up to 1 metre wide with 100 mm on either side resting on firm ground. As they are self-supporting, no additional reinforcements are required. If a water-seal is to be provided, a pan (with a trap) can be bolted on to the underside of the squatting plate. For pans, please see information under 'Complementary Requirements'. This slab can be used as a direct drop self-supporting slab or a pour flush slab. As a direct drop slab, it may be used on shallow or deep trenches or pits, up to 90 cm wide so that there is at least 10 cm of slab firmly on the ground. The slab is self-supporting and therefore needs no supporting members under it. Care should be taken to ensure that the pit edge is firm and stable before installing the slab. The slab comes with 8 mm thick and 275 mm long metallic pegs that can be used to firmly fix the slab. Good practice is to always put a lintel of concrete, bricks or blocks around the top of the pit to receive/hold the slab. The slab is for use in public pit or trench latrines during the first phase of an emergency. Each squatting slab should be allowed for 50 people in first phase emergency but the number of

Squatting plate
Plastic, w/o pan 120 x 80 cm

Contd...

users should gradually reduce to the minimum standard of 20 people per latrine. For 5,000 people therefore, 6 self-supporting slab kits should be ordered. For longer-term excreta disposal, slabs made from cheaper and more locally available materials should be used. Concrete slabs may be produced using the latrine slab making kit.

NOTE: This is a basic unit for rapid response to emergency only, it is therefore advisable that a more permanent and sustainable solution be found at local level for the medium to long term.

Complementary Requirements, to be ordered/procured separately:
- Pan with goose-neck trap
- Pan with P-trap

Emergency scenarios
- All circumstances where inadequate access to sanitation results in increased health risk ad safety and dignity of affectees (esp. girls and women) are compromised

Context in which item is mainly used (e.g. reinforce national system/structures, refugee camps, etc.):
- For human excrement management in emergency situations

Target population (beneficiaries: type and number of persons concerned):
- One slab per 20 beneficiaries is preferred target ratio (can be attained through progressive installation)

Country considerations:
- Cultural considerations: Local cultural norms must be determined, including issues around latrine access, orientation, design and cleansing practices
- Demographic considerations: Safe and private access to latrines, especially for girls and women (including at night) need to be ensured, frequently requiring suitable privacy fencing

Basic family water kit for 10 families

UNCCS Code:
362320

General Description:
- Basic family water kit for 10 families.

Technical Specifications:
- Basic family water kit sufficient for the needs of 10 families - for early response in emergencies.

Kit contents/Description:
- 20 x Water cont, PVC/PE,10l, collaps., w/o logo
- 10 x Bucket, HDPE, with lid,14 litre
- 72 x Soap, toilet, bar, approx.110 g, wrapped
- 10 x Water purif. (NaDCC) 33 mg tabs/PAC-50

Transport and Storage:
- Cold chain: No
- Dangerous good: No
- Batch managed: No

Packaging: Packed in heavy duty double wall export cartons
- Shipping details: 11 cartons per full pallet

Instruction for use (prescription, quantity per person, etc.):
- One kit is sufficient for the needs of 10 families for one month (50 people)
- For early response in emergencies

Precondition for utilisation:
- Initial distribution to new beneficiaries might require explanation on contents, their use and associated benefits.

Complementary Requirements, to be ordered/procured separately:

Water floc. & disinfectant, pdr/Box-240

Emergency scenarios
- For primary use in displacement environment or natural disasters resulting in loss of equipment and infrastructure and In case of disruption of safe water supply

Context in which item is mainly used (e.g. reinforce national system/structures, refugee camps, etc.):
- Displacement and disruption of safe water supply

Target population (beneficiaries: type and number of persons concerned):
- Households

Emergency scenarios where the item should not be used:
- Emergencies with only marginal loss of equipment

Other Emergency scenario considerations:
- In situations in which the only available water is turbid, supplementary water treatment options need to be considered

Country considerations: Traditional water storage containers may vary and different experiences of water treatment may need to be taken into consideration

Notes

Notes

Chapter 4 MATERIALS HANDLING

General

Materials handling is concerned with the moving, packing and storing of materials to meet specific objectives. The cheapest and most reliable power for this operation is the manpower available in the field. However, to facilitate easy and safe handling of material, some equipment is required during the first phase of emergency relief operations. Depending on the application, they can be categorized as follows:

- Lifting Equipment
- Transportation Equipment
- Safety Items

Lifting equipment

The first stage of handling is to load or unload the material. The lifting facility required for this can either be stand alone or built into the trolley or truck. This catalogue covers stand alone equipment only, which is broadly categorized as follows:

- Chain pulley blocks
- Winches
- Jacks

a) Chain pulley blocks

A chain pulley block can be mounted in different ways depending on the purpose. In this catalogue, a gantry crane has been selected for its suitability in emergency operations. The hoist can be used with or without this crane depending on the specific purpose.

A lifting sling such as a polyester or polypropylene rope, steel chain or wire rope is required in addition to the chain pulley block. It is necessary to remember the capacity of the equipment when it is being used for this purpose. This document includes a lifting sling specifically designed for lifting and a type of rope which could be used for lifting lightweight goods.

b) Pulling winches

Pulling winches facilitate the lifting of goods with higher mechanical efficiency as they require less force and can be used for both lifting and pulling. They are ideally utilized for the removal of large rubble or other heavy loads when cleaning-up an area.

c) Jacks

Jacks are commonly used as a lift for trucks or vehicles when changing tyres or for maintenance. Usually, a jack is included with a vehicle at the time of purchase; however, there may be a requirement for additional supplies of this type of equipment.

Transportation Equipment

There are two types of trucks, manually operated and powered trucks which can be utilized for the transportation of material. The use of hand-operated trucks allows for the participation of several people within the area of distribution. Different types of hand trucks are designed to suit various applications. When unloading heavy trucks, ships or airplanes, a powered truck is very useful. The different types of forklift trucks should in particular be carefully chosen. It is advisable that care is taken to ensure some protection from the weather when equipment is to be used in tropical and sub-tropical locations, as otherwise, this can lead to maintenance problems. In addition to trucks, inflatable boats are included in the catalogue for transportation of supplies by sea. The types of equipment covered in this section are as follows:

a) Hand-operated trucks

- Hand trucks
- Platform and cage trucks
- Pallet trucks

b) Powered trucks

- Forklift trucks, light duty
- Forklift trucks, medium duty

c) Inflatable boats

a) Hand-operated trucks

Choosing a hand-operated truck for the movement of goods is essential in setting up a reliable system. This type of truck requires minimum maintenance and is therefore very useful in emergency situations where reliability of supplies is very important.

*** Hand trucks**

There are many types of hand trucks designed for specific purposes. There are two varieties of hand trucks discussed in this catalogue; a simple type for the transportation of food parcels, food sacks or other sacks and a specialized type for the transportation of drums e.g. fuel drums.

*** Platform and cage trucks**

A major portion of the activity in storage is the movement of goods from one location to another. This task can be simplified through the use of a platform truck or a cage truck, provided the goods are not loaded on pallets. If the goods are lightweight and are space-consuming, a cage truck is to be preferred. Then the goods can be stacked vertically without the risk of overturning.

*** Pallet trucks**

Hand operated pallet trucks are very useful in the distribution of goods which are being freighted on pallets. Although the freight costs are higher, the use of a pallet truck, makes it possible to distribute goods more quickly and easily.

b) Powered trucks

The powered trucks included in this catalogue are differentiated according to use. There are basically three uses; loading and unloading of aeroplanes or other elevated sources, loading and unloading of heavy trucks, and loading and unloading of containers. The three uses require different criteria for selection of a forklift truck. In airports, the required lifting height is often 5 - 8 meters. This must be specified if ordering a truck for this purpose. In containers, the forklift truck must have a high free lift to be able to load and unload the goods. Otherwise the mast will exceed the height limit of the container, as soon as the fork is lifted. When loading and unloading a heavy truck, the high free lift is not important, but to standardize and to make the truck usable in all cases a forklift truck with high free lift should be selected.

Only forklift trucks for containers and for heavy trucks are included in this volume. When selecting the capacity of the truck it should be calculated to be 30% above what is expected to be the heaviest actual load.

The powered trucks included in this document are all diesel driven.

c) Inflatable boats

In the event of a flood or similar situation, some transportation must be provided by seaway. An inflatable boat is therefore included in this catalogue to meet this special need.

Safety Items

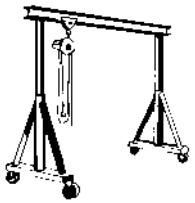
In order to establish a minimum safety level when working with trucks and hoists, a range of products are available. Lifejackets are also included to provide the required level of safety when transporting equipment by boat. The items included are as follows:

- Working gloves
- Safety helmets
- Dust masks
- Ear-muffs
- Lifejackets

Dust masks and working gloves are also very useful during the clean-up after an earthquake.

Gantry Crane

Shipping weight: **500 kg**
Shipping volume: **1.2 m³**
UNCCS Code: **435213**



Use:
- For lifting of goods in loading areas, warehouses, machine shops.

Type:
- Mobile gantry crane on four wheels. All steel construction.

Technical Specifications:

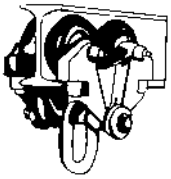
• Lifting capacity:	Minimum 2000 kg		
• Beam:	Standard I-beam profile		
• Height:	Approx.	200	mm
• Flange width:	Approx.	100	mm
• Length:	Approx.	3300	mm

Base:

• Width:	Approx.	2000	mm
• Overall height:	Approx.	3600	mm

Ball Bearing Trolley

Shipping weight: **25 kg**
Shipping volume: **15 pieces/m³**
UNCCS Code: **435351**



Use:
- To be used with gantry crane.

Type:
- Trolley with four steel wheels with bearings and side plates joined with one steel shaft for a hoist.

Technical Specifications:
- Lifting capacity: Minimum 3000 kg.
- Options: Steel wheels with ball bearings.
- Flange width adjustable: 100-200 mm.

Chain Pulley Block

Shipping weight: **20 kg**
Shipping volume: **60 pieces/m³**
UNCCS Code: **435116**

Use:
- To use on ball bearing trolley with the gantry crane.

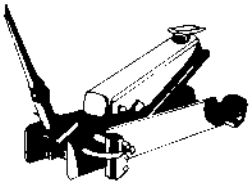
Type:
- Hand-operated chain hoist with overload limiter.
- Steel link chain, swivel and safety hooks included.

Technical Specifications:
- Lifting capacity: Minimum 2000 kg.
- Lifting height: 3 meters.
- Brake: Fitted with automatic brake.
- Construction: Fully enclosed spur gear with strong frame.
- Hooks: Forged steel safety hook conform to recognized safety standards.

Accessories:
- Tools used for maintenance.

Jack

Shipping weight: **15 kg**
Shipping volume: **0.1 m³**
UNCCS code: **435354**



Type:
- Manually operated hydraulic trolley jack of rugged construction.

Technical Specifications:
- Lifting capacity: Minimum 2000 kg.
- Lifting height: Minimum approx. 125 mm - Maximum approx. 500 mm.

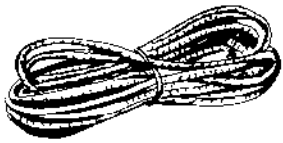
Handle:
- Removable
- Full 90° pumping action

Wheels:
- Two fixed steel wheels and two swivel castors.

Safety feature:
- Fitted with safety valve to prevent overloading.

Ropes

UNCCS code:
273160



Three different measurements are described below:

Diameter:		
• 6 mm	16 mm	24 mm
Material:		
• Polypropylene	Polypropylene	Polypropylene
Weight:		
• 2.5 kg/100 m	20 kg/100 m	45 kg/100 m
Coil of approx.:		
• 200 m	200 m	200 m
Safe load:		
• 50 kg	500 kg	1050 kg

Hand Truck

Shipping weight: **15 kg**
Shipping volume: **0.1 m³**
UNCCS code: **435364**

Type:
- Tubular sack truck of rugged construction.

Capacity:
- 200 kg.

Material:
- Tubular steel construction.
- Painted frame.

Toe plate:
- Approx. 320 x 200 mm.
- Solid.

Wheels:
- Roller bearing rubber-tyred wheels.
- Size: 200 x 50 mm approx.

Handles:
- Plastic grip handles.

Drum Truck

Shipping weight: **30 kg**
Shipping volume: **0.5 m³**
UNCCS code: **435355**

Type:
- Tubular drum truck of rugged construction.

Capacity:
- 300 kg.

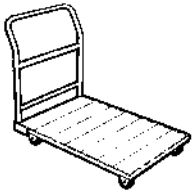
Material:
- Tubular steel construction.
- Painted frame.

Toe bars:
- Welded onto the frame.

Wheels:
- Solid rubber tyred wheels.
- Size: 250 x 50 mm approx.

Handles:
- Plastic grip handles.

Platform Truck



Shipping weight: **60 kg**
Shipping volume: **0.4 m³**
UNCCS code: **435352**

Type:
- Tubular platform truck of rugged construction.

Capacity:
- 1000 kg.

Material:
- Base frame is welded steel with rounded corners.
- Handle is tubular steel construction.
- Abrasion proof paint.

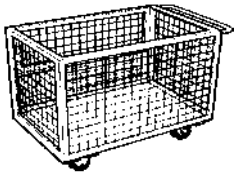
Platform:
- 1400 x 700 mm approx.

Wheels:
- Roller bearing with rubber tyre wheels.
- 2 fixed and 2 swivel castors.
- Size: 200 x 50 mm approx.

Handles:
- Tubular metal handle, removable.

Cage Truck

Shipping weight: **50 kg**
Shipping volume: **0.7 m³**
UNCCS code: **435353**



Type:
- Welded steel tube frame and mesh sides with 2 removable sides.

Capacity:
- Minimum 250 kg.

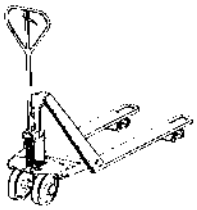
Size-Platform:
- 1000 x 600 mm approx.
- Height of sides: 800 mm approx.

Material:
- Frame: Painted mild steel tube.
- Mesh sides: Corrosion resistant steel or painted.

Wheels:
- 2 fixed and 2 swivel solid rubber tyres.
- Diameter: Minimum 60 mm.

Pallet Truck, Manual

Shipping weight: **60 kg**
Shipping volume: **0.4 m³**
UNCCS code: **435326**



Use:
- To move pallets within a store or warehouse.

Type:
- Manual pallet truck operated from operation handle.

Material:
- All steel construction.

Fork:
- Width: 520 mm.
- Length: 1125 mm approx.
- Height: Lowered: 80 mm.
- Raised: 120 mm.

Pump:
- Heavy-duty sealed hydraulic jack unit.

Hand operated lever:
- 3 position control for lower, neutral and raise.

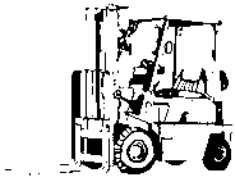
Load:
- Lifting capacity 2000 kg.

Wheels:
- Nylon wheel with built-in bearings.
- Fork wheels in single or bogie-mounting.
- Dimensions:
- Steering wheel: approx. 175 Ø x 60 mm wide.
- Fork wheel: approx. 85 Ø x 100 mm wide.

Accessories:
- Spare parts for two years of operation.
- Handtools used for maintenance.
- Operation and service manual.

Forklift Truck, Light Duty

Shipping weight: **2700 kg**
Shipping volume: **5.5 m³**
UNCCS code: **435312**



Area of use:
- To load and unload heavy trucks and containers. Also to operate inside 20 feet standard containers.

Type:
- Forklift truck, diesel driven.

Technical Specifications:

Fork:
- Adjustable fork width.
- Length: 1000 mm approx.

Lifting:
- Method: High freelift.
- Load capacity: 1500 kg at 500 mm load centre.
- Lifting height: 3000 mm.
- Lift speed (loaded): 600 mm/sec approx.

Body:
- Strong steel framed body.
- Safety cab with adjustable driver seat.

Wheel:
- Pneumatic tyre type
- Front tyre: 6.50 x 10-10 ply.
- Rear tyre: 5.00 x 8-8 ply.

Drive:
- Diesel engine output.

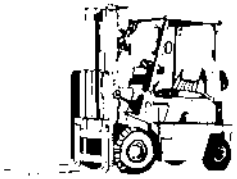
Travelling speed:
- Approx. 20 km/h (without load).

Turning radius:
- Approx. 2000 mm.

Accessories:
- Tool kit for maintenance.
- Spare parts for two years of operation.
- Tool kit to repair punctured tyres.
- Operation and maintenance manual.

Forklift Truck, Medium Duty

Shipping weight: **8150 kg**
Shipping volume: **22 m³**
UNCCS code: **435313**



Use:
- To load and unload heavy trucks and container. Also to operate inside 20 feet standard containers

Type:
- Forklift truck, heavy type, diesel driven.

Technical Specifications:

Fork:
- Adjustable fork width
- Length: 1200 mm approx

Lifting:
- Lifting method: High free lift
- Load capacity: Minimum 5000 kg at 600 mm load centre.
- Lifting height: Minimum 3100 mm.

Body:
- Strong steel framed body.
- Safety cab with adjustable driver seat.

Wheel:
- Pneumatic tyre type.
- 4 wheels in front and 2 rears, all same size.

Tyres:
- 7.50 x 15-12 ply.

Drive:
- Diesel
- Indicative values: Engine power: 50 kW
- Consumption: 5 litres/h

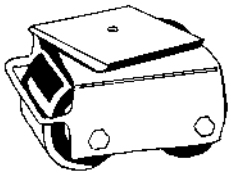
Speed:
- Travelling without load: Approx. 25 km/h.

Turning radius:
- Approx. 3400 mm.

Accessories:
- Tool kit for maintenance.
- Spare parts for two years of operation.
- Tool kit to repair punctured tyres.
- Operation and Maintenance manual.

Dolly

Shipping weight: **8 kg**
Shipping volume: **0.01 m³**
UNCCS code: **435691**



Use:
- For moving heavy equipment.

Type:
- Roller Skid Dolly with swivel top.

Technical Specifications:

Capacity:
- Minimum 1250 kg.

Size:

• Height:	110 mm	approx.
• Width:	300 mm	approx.
• Length:	230 mm	approx.

Swivel top:
- Rotates 360°

Roller bearing rollers:

• Diameter:	100 mm	approx.
• Width:	105 mm	approx.

Frame:
- 6 mm thick steel.

Material:

• Frame:	Steel.
• Axels:	Steel.
• Rollers:	Steel.

Boat, Inflatable

Shipping weight: **450 kg**
Shipping volume: **1 m³**
UNCCS code: **494200**

Type:
- Inflatable boat for approx. 10 persons, including outboard motor.

Technical Specifications:

• Capacity:	Minimum 1200 kg	
• Collar:	Lifeline built-in	
• Inflated:	Total length:	Approx. 4.7 m
•	Total width:	Approx. 2.0 m
•	Air chamber diameter:	Approx. 0.5 m

Material:
- Heavy duty nylon weave, coated on both sides.

Accessories:
- Outboard motor, 1 x 50 hp or 2 x 25 hp (twin installation).
- 2 Paddles.
- Baler, approx. 1.5 litres.
- Boat-hook.
- Foot pump with hose.
- Repair kit.
- Operation manual.

Alternative:
- Boat for 6 persons, 650 kg capacity.
- Outboard motor 40 hp maximum.
- Size: 4.0 x 1.7 x 0.4 m.

Life-Jacket

Shipping weight: **650 g**
Shipping volume: **35 pieces/m³**
UNCCS code: **271921**

Use:
- During handling of materials on boats.

Type:
- Life-jacket, adult size.

Technical Specifications:
- Lifting material: Foam with buoyancy covering a weight from 40 to 80 kg.
- Outer material: Covered with nylon.
  Mounted with reflectors.
  Colour: Orange.

Accessories:
- Signal whistle.

Protective Mask

Shipping weight: **0.6 kg/100 pieces**
Shipping volume: **12.7dm³/100 pieces**
UNCCS code: **369737**

Use:
- Protecting against light concentrations of dust and mists which do not contain harmful vapors.

Type:
- Dust/mist respirators covering mouth and nose.

Material:
- Synthetic fibre.

Filters:
- Woven fibre filter.

Options:
- Double elastic headbands.

Working Gloves

Shipping weight: **20 kg/100 pair**
Shipping volume: **0.05 m³/100 pair**
UNCCS Code: **282387**

Type:
- Chrome leather gloves with elasticized gauntlet cuff.

Technical specifications:

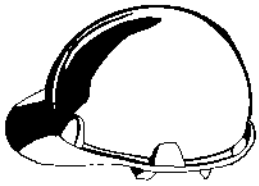
Material:
- Full leather front and cotton back.

Size:
- 10.5 cm.

Option:
- With fingertip and knuckle protection of leather.

Safety Helmet

Shipping weight: **0.5 kg**
Shipping volume: **100 pieces/m³**
UNCCS Code: **369711**



Type:
- Safety helmet of rugged construction.

Head band:
- Adjustable to fit size 6½ to 7½.

Material:
- High density polyethylene, with easily replaceable 4 point suspension.
- Conforms to recognized standards.

Hearing Protector

Shipping weight: **0.15 kg**
Shipping volume: **250 pieces/m³**
UNCCS Code: **369735**

Type:
- Ear muffs.

Technical Specifications:

Noise reduction:
- Approx. 30 dB

Material:
- Head band: Plastic reinforced glassfibres or stainless steel spring bands.
- Cups: Thermoplastic.
- Filling: Non-toxic sound absorbing foam.

Options:
- Easily adjustable cups.

Shoes, Safety

Shipping weight: **1 kg**
Shipping volume: **0.02 m³**
UNCCS Code: **295322**

Type:
- Safety shoes with a protective sole and a built-in protective toe cap.

Size range:
- 6 to 12 (US size).

Material:

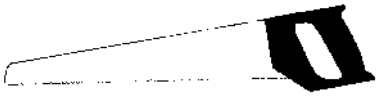
Toe cap:
- Steel.
- To withstand minimum 2500 kg static pressure.

Sole:
- Moulded rubber sole with a built-in steel arch at the instep.

Upper:
- Leather.

Hand Saw

Shipping weight: **0.4 kg**
Shipping volume: **500 pieces/m³**
UNCCS Code: **429310**

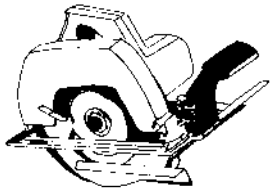


Type:
- Hand saw.

Technical Specifications:
- Length: 550 mm (22″).
- Teeth: Universal tooth setting for cross-cutting and ripping.
- Approx. 7 teeth per inch.
- Material: Blade: Hardened and tempered chrome nickel alloy steel.
- Handle: Plastic or hard wood handle.

Circular Saw

Shipping weight: **6.5 kg**
Shipping volume: **0.002 m³**
UNCCS Code: **429315**



Type:
- Portable circular saw for rip, cross and mitre cutting.

Technical Specifications:

• Power input:	Approx. 1400 W	220 V (AC)
• Speed:	No-load speed:	5000 rpm
• Capacity:	At 90 degrees:	65 mm
• Continuous cutting depth adjustment:		0-65 mm
• Saw blade:	Diameter:	90 mm
• Drilling diameter:		30 mm

Features:
- Interior retracting guard providing proper saw blade covering .
- Safety coupling for disengaging in case of blade jamming.
- Shavings blower keeping cutting point and track clean.
- Dust extractor.

Accessories:
- Allen key and parallel fence.
- One saw blade.
- Instruction and maintenance sheets.

Snow Chains For Vehicles

Shipping volume: **14 kgs/pce**
UNCCS Code: **491943**

Use:
- To be used on trucks/light vehicles.

Type:
- Reinforced snow chain for vehicles.

Size:
- Truck tyre size to be specified when ordering.

Material:
- Case hardened steel with polished finish.

Roller Crowbar

Shipping weight: **14 kg**
UNCCS Code: **429355**

Use:
- In warehouses or freight terminals where heavy items have to be moved

Type:
- Crowbar with two rollers built in.

Technical Specifications:

Capacity:
- Minimum 2,500 kg

Crowbar style:
- Nose rolls

Wheels:
- Material: Steel
- Diameter: 150 mm
- Width: 50 mm

Handle:
- Material: Painted steel

Notes

Chapter 5 BASIC LOGISTICS

General

Logistics for emergency operations is a complex task aiming for mobilization and development of the necessary capacities to deliver assistance to the communities in need.

It contains actions *inter alia*, to ensure the provision of facilities to receive/discharge and store at ports and airports, any supplies to be imported, organize the transport of supplies within the country, organize storage for operational and any necessary contingency stocks at appropriate locations, ensure fuel supplies, maintenance for all means of transport, establish reliable means of communications between all key locations etc..

These elements of logistics operations are normally dealt with by logistics offices and operational managers and not by Procurement officers.

This chapter is therefore limited to the part of contracting the efficient forwarding of acquired relief items up to the first point of entry into the disaster-stricken country, and is intended to assist Procurement Personnel to do this job in an effective and professional way.

Apart from the acquisition of suitable products as identified in this catalogue, the timely and safe provision of the goods to the disaster area is the key to the success of any emergency relief operation.

Like the detailed technical specifications for relief items to be provided, a clear and comprehensive list of shipping requirements is also indispensable.

Based on practical field experience, this chapter will provide necessary details, specifications and useful information that is to be considered for essential elements of the forwarding process.

In particular, such important elements as following will be dealt with

- Packaging
- Quality Inspection
- Selection of mode of transport and shipping arrangements
- Insurance

General

One can hardly imagine what treatment relief supplies undergo during the journey from their country of origin to the place of distribution. A single item may be loaded or off-loaded up to a dozen times before it reaches its final destination. And then, it is possible that the eventual beneficiary will still need to carry it over long distances to his family.

Particular attention should therefore be given to adequate and durable packing of relief supplies, which in fact, encompass a considerable variety of items and need to deal with virtually every conceivable (and sometimes quite inconceivable) eventuality.

The objectives of packaging include:

a) Containment

- Small items in quantity are contained for handling purposes and for issue in standard units.
- Items of inconvenient shape are contained in regular containers for similar reasons.
- Items may be contained in ways that permit their easier placement upright on shelves.

b) Protection

- Fragile items need protection from handling.
- Items to be temporarily stored outdoors need protection from the weather.
- Handlers have, on occasion, to be protected from items.
- Valuable items or items in bond require packaging for security.

c) Identification

- Technical information of hazardous or potentially life-expired items (pharmaceuticals, film) must be communicated to potential users.
- Items are sometimes required to certain operating or usage instructions.

Further consideration should also be given:

- to protect goods against breakage, contamination or distortion.
- to reduce the volume and thereby cut freight costs.
- to facilitate handling.
- to facilitate storage.
- to group goods into a convenient unit for distribution.
- to reduce opportunities for pilfering.

Outer packing

a) Weight

To allow acceptable ease of manual handling in field locations where mechanical equipment may sometimes not be available, maximum gross weights of some commonly encountered items should be restricted as follows:

– Boxes or cartons: 25 kg
– Bundles or sacks: 50 kg

b) Strength

Strong outer material to ensure that packages do not twist or collapse during handling.

c) Fillers

Empty spaces should be filled with filling material like wood shavings, straw, shredded paper, plastic foam, corrugated paper board etc., to eliminate any free movement of the contents of the packages, and also to contribute towards the mechanical rigidity of the packages.

d) Stackability

Package sizes in each consignment should be standardized, and packages should preferably be stackable up to a height of 3.0 meters (Round or cylindrical packages should be avoided where possible).

e) Sealing

All packages should be closed or lidded and sealed.

f) Weatherproofing

Waterproof material or material treated for moisture resistance should be used for packing.

g) Seaworthiness

Fortified, strong, solid packaging material i.e. multi-wall cardboard or wood should be used.

h) Extra empty Bags or Cartons

Ask for extra empty bags or cartons, and the number should be equal to 2% of the total number of bags or cartons with large consignments.

i) General advice

- Never pack loose items in sacks.
- If several transfers are required along the way from vessel to rail, rail to lorry and finally to 4-wheel drive vehicle involving manual transfer, the packing will require special provision for this, and the weight of each package may need to be restricted to allow manual transfer.
- Where possible, the type of packaging should be specified in detail at the time of order placement.

Inner packing

Attention should be paid to the following points:

- The inner packing should be unbreakable and sealed
- Glass or brittle containers should be avoided
- Cellophane should not be used
- Lids should be fastened tightly
- There should be no sharp edges

a) Goods by Type

- Never mix medical with non-medical supplies.
- Generally, any one package should contain only one product, and only one size of that product.
- Goods should only be mixed if special mixed units are required, i.e. "Family parcels".

b) Edible and Inedible goods

- If packed with other goods, the contamination of edible foods must be prevented by provision of adequate barriers.
- Edible and inedible products must be packed separately in plastic wrapping when included in the same unit or consignment

c) Certification

- Shipper should certify that packing complies with I.A.T.A. regulations, as required.

Other considerations

a) Cartons, desirable qualities

- Maximum content weight: 25 kg.
- Strong export carton such as multi-wall cardboard container with one waterproof layer.
- Strong and stackable when filled to capacity, solidly packed and sealed.
- Resistant to humidity which can cause loss of corner strength or collapse.
- Bound with tape or strapping.

b) Wooden Box or Case

Used for breakable or valuable goods, for sea shipments and where especially difficult conditions of transportation are likely to be encountered.

- Maximum gross weight: 50 kg, but preferably 25 kg.
- Stackable
- Strong quality wood
- Treated for moisture resistance
- Lined with heavy plastic or waterproof paper
- Bound with strapping

c) Wooden crate

Used to protect heavy articles such as generators and medical equipment.

- Packing case made from slats of wood

d) Bag or Sack

Used for packing bulk dry food items.

- 3 ply paper sack with plastic inner sack, used for milk powder and enriched food products.

- Jute outer sacks with cotton inner sack for legumes, grains etc.
- Woven polypropylene or cotton/polypropylene blend outer sack, with cotton inner sack for cereals, grains etc.

e) Bale or Bundle

Generally used for packaging blankets and clothing.

- Generally maximum weight: 50 kg
- Compressed and strapped
- Covered with waterproof material

f) Pallet

Generally used for outgoing relief consignments.

- Good quality of wood
- Covered with plastic shrink-wrap or plastic sheeting and bound with strapping or strapped thoroughly all around goods and the pallet
- Size and type chosen to fit onto transport and loading equipment used
- Packing list must itemize goods on each pallet

g) Standardized Trans-Container, most commonly used are:

- 20 foot container and 30 cubic meters capacity with a maximum load of 18 tons.

Internal dimensions:	**Length:**	5.89 meters
	Width:	2.32 meters
	Height:	2.23 meters
Door:	**Width:**	2.30 meters
	Height:	2.14 meters

- 40 foot container and 60 cubic meters capacity with a maximum load of 30 tons.

Internal dimensions:	**Length:**	12 meters
	Width:	2.32 meters
	Height:	2.34 meters
Door:	**Width**:	2.30 meters
	Height:	2.23 meters

- 45 foot containers are also in use, mainly in the U.S.A.

Note: Where containers are to be used for dispatch of supplies, the following points should be covered:

- It must be confirmed that the destination can handle the container
- Each package in container must be properly marked

h) Strapping, Taping

Bales, wooden boxes and cases are always strapped.

- Woven polyester strapping preferred to metal bands
- Strong packing tape may be preferred on cartons if under 10 kg
- Strap at least once around length and twice around width of package

i) Tins, Cans

- Re-usable containers preferred
- Accompanied by opening devices

j) Plastic Bags and Wrapping

- No cellophane
- Heavy duty plastic
- Possibly vacuum packed

k) Filling Materials

- Wood shavings
- Straw
- Shredded paper
- Styrofoam
- Air-bubble plastic sheet
- Corrugated paperboard partitions

Markings

In large scale relief operations, the simultaneous arrival of thousands of relief parcels is common. Information on the content of these consignments is thus of vital importance.

Accordingly, attention should be paid to the following issues:

a) Visibility

- The vendor shall preferably stencil in bold letters and waterproof ink the address indicated in each purchase order on each pallet, package, carton etc..
- Dark lettering on light background

  Non-detachable Labels:
- Glue labels with heat-curing glue
- Avoid self-adhesive stickers

b) Identification

- To facilitate identification of shipments at the point of discharge, each pallet, package, carton etc., shall have a wide blue band in the form of a ribbon of blue paint, at least one inch wide (In the case of containerized shipments, the blue band is not required).

c) Addresses

The actual address to be used shall be that indicated in the purchase order. The following information should be available "at a glance" on each label:

- Symbol of the organization placing the order
- Purchase order reference
- Final destination (port of arrival)
- Name of sender
- Total number of pieces
- Box number, if part of a set
- Weight
- Description of contents
- Consignee address

The language to be used depends on the destination of the consignment. In most cases, English, French or Spanish would be used.

d) Air consignments

For air consignments, a label with the following information must be attached:

- Airway bill number
- Airport of destination
- Airport of departure
- Total number of pieces
- House air way bill number, if any

e) International hazard warning signs

These are used to indicate fragile, poisonous, no hooks, keep dry, keep cool at °C, combustible etc. The labels are available from airports for air shipments.

Additional compulsory information may need to appear, i.e. any warnings required by law, because of the nature of the goods or simply required by caution for proper handling.

It should be kept in mind that the physical handling in warehouse sheds is often done by unskilled or illiterate workers unable to read the European alphabet. Indications are therefore preferable as symbols such as broken glass for fragile items, or arrows for a package to be kept upright.

General

When purchases are made from a number of supply sources, it may be necessary to ascertain that the goods meet the required specifications, arrive in good condition and perform to expectations.

For this reason, quality inspection service is often ordered from specialized companies complementing supply contracts for goods.

Available services include:

a) Endorsement of supplier's capability

For large-scale contracts an additional appraisal of supplier's capability can be undertaken in order to assess in depth, the suppliers ability to supply goods to the required standard, their capacity to supply, and the effectiveness of the quality control systems used by them.

b) Protection of purchased goods/equipment

In order to minimize the risk of the goods or equipment proving inadequate when received, or quality not up to the mark, the following services can be ordered prior to delivery:

- Verification of conformity to standard specifications
- Check for quantity and packaging
- Provision of an inspection report, including a final inspection certificate.

Terms of reference governing the mandate of inspecting agencies

Terms governing the pre-dispatch inspection of goods consignments can be of a varied nature, simply because of the vast range of goods needing to be dealt with in the procurement operations of the UN system and affiliated organizations.

As a general rule, the following aspects are contained in the services offered by Inspecting Agencies:

- Assessing the capability of remote and often unknown manufacturers before a contract is awarded
- Advising on competitive tender adjudication
- Assessing samples
- Making critical stage manufacturing checks and witnessing final tests

- Approving protection and packing for shipment
- Helping to maintain quality of supply from one supplier to another
- Issuing verification that the correct goods are dispatched

These services can make some important contributions toward the successful implementation of relief projects by:

- Minimizing the risk of delays and rectification costs due to damaged or incorrect equipment arriving at site
- Maximizing quality and reliability standards inherent in the specification

Given the wide range of supplies that are handled by the UN and affiliated organizations, it is doubtful that any one inspection organization would be capable of offering their services for all the items involved.

There are, however, a large number of individually specialized agencies that cover the entire range of required services. Typically, the requirements of inspection needs faced by the UN and affiliated organizations will tend to be concentrated in the aspects relating to pre-dispatch quality checks, quality assurance audits, in-process and commissioning surveillance and also packing and shipping verification.

The Inspecting Agency selected for a particular assignment will need clear instructions as to the scope of the service required. Most of the companies offering services in this field are happy to guide potential clients as to the extent of scrutiny, which is desirable or necessary in each particular instance. This would naturally depend on several factors such as the commodity being procured, the source of supply, past experience of the purchasing organization with the particular supplier etc..

The agreement with the Inspecting Agency would normally be in the form of a contract specifying the exact nature and scope of the quality checks at various stages during the contracted supply of the goods being purchased.

Charges for the services of the Inspecting Agencies can either be as "Lump sum for services rendered" or alternatively, as a percentage on the dispatch value of the goods under inspection.

Guidelines for selection of Inspecting Agencies

From the list of the companies offering quality inspection services, it can be seen that these are situated in widely-dispersed locations, and in fact, tend to be specialized in the particular fields related to the pre-dominant industrial and commercial activities of their regions.

The factors influencing the choice of company for a specific assignment of Quality Inspection include:

- The background and experience profile offered by the company in the particular field relating to the commodity to be shipped.
- The location of the Inspecting Agency with respect to the location of the supplier in question. This will have a bearing on the familiarity that the Inspecting Company would have with the local environment, and could influence the effectiveness of the service at that location.
- The strength of the company's professional manpower.
- The flexibility of response, and the degree of expert back-up available to field inspectors.
- The access to communications within the company, in case of a remotely-located head office. This should be available for emergency consultations needed by field staff, which in turn affects the supply or shipment of the material in question.

General considerations

The annual volume of equipment and supplies procured by the various agencies of the United Nations system adds up to some US $ 3.5 billion a year. A considerable proportion of these goods are shipped from the place of procurement to their final destination.

Transport is the essential link between supplier and receiver. Even the best supplies are of no avail if they are not received when they are needed, where they are needed and in good condition. This necessitates a close collaboration between purchasing and shipping, since the journey involved, whether surface or air, may be an important factor; and because the cheapest price, FCA (or FOB) excluding shipment, may not be the cheapest landed cost.

Methods of dispatch

Some important aspects which need to be considered when selecting a method of transport are:

- Speed
- Reliability
- Convenience
- Flexibility
- Customer communication

Various methods are available for transportation of goods between countries:

a) Ocean freight

Conventional service

Cargo is transported by a "carrier" between a named port of shipment and a designated place of destination. The carrier issues a bill of lading (B/L) covering the consignment which is loaded into one of the holds of the carrying vessel (exceptionally on deck if the nature of the goods so requires).

Container services

Cargo is transported in a 20 foot or 40 foot container. The use of containers is expanding constantly due to the considerable cost advantages available from the savings in loading/unloading time and for the shipper, also the reduced risk of loss, pilferage and damage, through a safer carriage. Easily stocked goods can be delivered with lighter packing, thus not only allowing savings here, but also on transportation costs because less weight/bulk means lower charges.

When a shipper does not have enough cargo to load a container to its full capacity, he may often find it an advantage to contact a forwarder running a "consolidated container service", i.e. using one container for several loads originating from various shippers. This is of the greatest interest in the case of shipments to land-locked countries, as the use of containers practically eliminates the risks of loss, pilferage and delays in the port of unloading for trans-shipment over land.

Bills of lading are issued direct by the carriers, in case of a "full container load (FCL)", or by the consolidator, in case of a "less than full container load (LCL)". In the last instance, the document issued is a "house" bill of lading for each individual load, the container itself being covered by a master B/L kept by the consolidator.

Chartering

When a consignment represents several thousand tons or cubic metres, the normal procedure is to charter a vessel or part of a vessel, after contacting possible carriers for quotations. A charter-party can be concluded for a specific load (tonnage), for a journey or for a determined length of time.

b) Rail or Road

For overland transportation, cargo can be sent by rail or road, depending on the availability of services and, of course, the type of cargo to dispatch. Bulk cargo such as coal, sand, cement etc., will normally travel by rail or barge wherever possible. Smaller and higher value consignments are more and more dispatched by road, either as full lorry-loads, with the advantage of door-to-door service, or in consolidated containers described before.

c) Air freight

The traditional method of air dispatch is to deliver a consignment covered by an individual airway bill to an air carrier (either direct or through a freight forwarder). The airway bill will specify the goods to be carried between two designated airports placed at the disposal of a designated consignee, against payment of the freight charges calculated in accordance with the rates applicable in their current tariff.

In the same manner as for surface transport, air consignments may be carried in consolidated services operated by freight forwarders, between main airports at advantageous rates. In case of large loads, it is possible to charter a full aircraft or arrange for what is called a split-charter if the load will not fill the aircraft to full capacity. Such a contract is placed subsequent to receipt of quotes from carriers, whether traditional airlines, their subsidiaries specializing in chartering or independent carriers.

d) Post

Where postal services are reliable, small parcels can often be more cheaply sent by air parcel post or even by surface parcel post, if the time element is not of primary importance. These, however, should always be sent registered or insured. The main consideration is the reliability of the postal service at the destination, in advising consignees of the arrival of parcels, which in most instances, have to be cleared through customs before they can be delivered.

e) Multimodal Transportation

This relatively recent method of transportation is essentially the movement of one unit load by several methods of transportation under one document from origin to destination, without breaking-up the unit load.

It is the development of containerized traffic which has made this possible, as containers can travel from end to end without being opened/unloaded/reloaded during the course of the journey.

Companies which can offer multimodal transportation are usually large firms of forwarding agents who specialize in such traffic, as it obviously requires considerable organization for the smooth working of the chain of transport events involved here.

The advantage to those who make use of multimodal transportation is, that they have one document only for the whole operation and that the operator is legally responsible for a satisfactory performance by his own staff and by the agents or branches that he is employing.

Selecting the most appropriate method of dispatch

Several factors need to be considered when planning the dispatch of an item, and they may be conflicting. Some important aspects are type of goods, journey involved, the time element, and the cost element and safety considerations.

In some cases there is little choice: perishable goods will be sent by air, and large quantities of fertilizer, insecticides or sewer pipes will be sent by surface transport. Again, dangerous goods may not be allowed by airfreight. But in many instances there is a wide flexibility as to the choice of method of transportation.

Origin and destination determine distance and can decide the type of transportation required. Surface shipment may be logical in certain cases while airfreight might be required in others.

In emergencies, the initial top priority is the delivery of supplies within the shortest possible time. Subsequent follow up supplies will however often present a range of possibilities requiring some consideration to arrive at the best choice of transportation.

Parties involved in the chain of transportation

There are several parties involved in the process of transportation of supplies from the point of origin to the designated destination. These include the following:

a) Carriers

Inland carriers are those who take charge of the consignment at the supplier's premises, carry and deliver it to the specified warehouse, berth, wharf or airport of departure. At destinations, inland carriers may be required to transport consignments from the place of arrival to their final destination.

Overseas carriers are either steamship or airline companies. A shipment may require transportation by one or several carriers if trans-shipments are involved.

b) Forwarding Agents

Known also as freight forwarders, freight brokers, transit agents, and who also may act as clearing agents or customs brokers. In most cases buyers and sellers rely on the services of specialized firms for shipment and processing of customs formalities for their cargo. The role of the forwarding agent is to monitor shipping from the moment cargo becomes available. At destination, forwarders may be appointed to retrieve cargo, arrange for its clearance through customs, and for its delivery or on-forwarding

c) Dock Authorities

Consignments will be kept in the jurisdiction of port/airport authorities pending shipment or pending clearance and retrieval at destination.

d) Customs Authorities

Cargo imported or exported from one country into another needs customs clearance. The functions of the customs authorities include controls to prevent illegal transactions. Documents need to be processed through the competent customs offices.

e) Insurers

By means of separate insurance policies or under contractual arrangements, insurance companies will hold all cargo covered against the hazards of transportation from origin to destination.

Shipping documents

Certain basic documents are required for the carriage of cargo. Other documents are also needed by consignees and buyers to complete any transaction.

a) Ocean freight

The bill of lading (B/L), which is the document covering the carriage of goods by sea, is the authentic receipt delivered by a carrier, confirming that the goods therein specified have been loaded or taken in charge for loading on a designated vessel for carriage to a specified port. The original B/L is the title of property to the goods.

The B/L can be of the following types:

Relating to parties

B/L to a named person or consignee - that person alone will be able to collect the goods at destination against presentation of the original B/L.

B/L to bearer - the holder is considered as the legal owner of the goods.

B/L to order - that is to the order of the shipper, who must endorse it first. Such a B/L can be endorsed by several persons successively, to transfer the title to the goods to successive parties.

Relating to journey

Direct B/L - from port to port, without transshipment.

Through B/L - means that transshipment is taking place along the journey. This can be either in a first port of unloading for transfer into another vessel serving the final destination, or in a port for overland on-forwarding, or again, from an inland origin for carriage to a port where shipment will take place.

In a through B/L, the cost of transshipment, the first and/or second freights are paid by the carrier and normally billed as a lump sum. Transshipment, however, is always effected at the risk of the owner of the goods.

These various features of Bs/L designating beneficiaries and routing, can combine their elements, and there can be, for instance, a direct B/L to order, or a through B/L to bearer.

Forwarder B/L

In the case of multimodal transportation, one document only is issued and this is what is called a "house" B/L or also a FIATA B/L, if the document is prepared on forms emitted by FIATA (International Federation of Freight Forwarders Association). This document is in fact a through B/L, with the difference that it is not emitted by an ocean carrier but by a forwarding agent under his own name.

b) Rail - Road

Goods transported by rail between countries are covered by international "rail consignment notes". These documents are not negotiable, the cargo being placed at the disposal of the designated consignee, upon proof of identity. For road transportation, waybills are normally issued. For loads less than a full truck, consolidation is the rule.

c) Air freight

The document covering the carriage of goods by airfreight is called an airway bill (AWB).

The AWB to air transportation is what the B/L is to ocean freight, with however, a fundamental difference: the AWB is not a negotiable document; it cannot be endorsed and is not a title of property to a cargo as such. There is no "original" AWB to be given to the consignee to enter into possession of the goods. The consignment is placed at the disposal of the stipulated consignee against proof of identity, a signed receipt, and payment of charges if any.

When airfreight consignments are sent by a joint-cargo service, the consolidator will issue an ordinary AWB to his agent at destination, covering the entire consignment, but issue a separate "house air waybill" (HAWB), for each individual lot. The agent will place the individual lots at the disposal of the various consignees designated on the house air waybills. As with Bs/L, all detailed information required to identify the consignee and the goods must appear on the AWB.

d) Post

A postal declaration giving the name and address of the consignee must be filled. A receipt is given by the postal authorities for all registered/insured parcels.

e) Supporting documentation

In addition to the basic transport documents, buyers and receivers may require some other forms:

- Invoices and packing lists, essential to clear through customs and to tally the supplies received
- Forwarder's receipt, to process suppliers' invoices for payment;
- Certificate of origin, may be required by the customs, in the country of destination
- Legalized invoices, may be required by the customs, in the country of destination
- Consular invoices, may be required by the customs, in the country of destination

- Declaration on dangerous or restricted cargo required by carriers before they will accept such items for transportation
- Insurance certificates, as applicable
- Veterinary certificates and
- Certificates of analysis or of conformity in accordance with special conditions, which may be part of contracts.

In some special cases, additional certifications or mentions may need to appear on invoices or shipping documents. When this is required, forwarding agents will normally be able to deal directly themselves.

INCOTERMS

To avoid conflicts and difficulties, buyers and suppliers must have a common understanding of the terms under which they trade. The mention of "INCOTERMS 2000" in a contract determines the obligations of both parties, and contributes to eliminate causes of disagreement. In some countries INCOTERMS have to be used by law, in others, they are recommended and could be judged to be legally binding in any dispute. There are 13 different terms, but in practice, commonly used terms in the UN system are as follows:

Any mode of transport including multimodal	**EXW**	Ex Works	(... named place)
	FCA	Free Carrier	(... named place)
	CPT	Carriage Paid To	(... named place)
	CIP	Carriage and Insurance Paid To (... named place of destination)	
	DAF	Delivered at Frontier	(...named place)
	DDU	Delivered Duty Unpaid	(...named place of destination)
	DDP	Delivered duty Paid	
	FCA	Free Carrier	(... named place)
Maritime Transportation	**FAS**	Free Alongside Ship	(... named port of shipment)
	FOB	Free On Board	(... named port of shipment)
	CFR	Cost and Freight	(... named port of destination)
	CIF	Cost, Insurance and Freight	(... named port of destination)
	DES	Delivered Ex Ship	(...named port of destination)
	DEQ	Delivery Ex quay	(...named port of destination)

Table 1. Commonly used INCOTERMS in the UN System

The detailed definitions of the above-listed terms may be referenced in INCOTERMS 2000, published by the International Chamber of Commerce in Paris.

The minimum responsibility for suppliers is "ex-works" (EXW), where the supplier has few obligations other than to make the goods available at the warehouse/factory gate.

The buyer, who wishes the supplier to bear the entire responsibility of delivery to the country of importation including risk involved in bringing the goods, should opt for the term DDU (Delivery Duty Unpaid). This excludes duties, taxes and other official charges payable upon importation, from which the UN is exempt.

On the whole, INCOTERMS tend towards minimum liability on the part of the supplier. It is for the buyer to ensure that the supplier's liabilities not in the rules are imported into the contract if he so desires.

When purchasing from a country which has strict exchange control regulations, it is always preferable to buy on a CPT/CFR basis, the main reason being that, in case of CIF or CIP, the settlement of potential claims against the insurance company in the country of the supplier is rather lengthy, as it normally requires the approval of exchange control authorities.

General

It is normal practice to insure goods in transit. Briefly, the following reasons compel traders to contract transport insurance:

Protection against financial losses resulting from damages, pilferage and theft, breakage, non receipt of entire or part of a consignment and damage suffered by goods whilst in transit.

Protection against financial claims that can be made against the owner of goods on board a vessel in case of a "declared general average" (the goods themselves being undamaged).

It may be of interest to explain here the exact significance of the terms "particular average" and "general average":

- Particular average means damages sustained by goods only or by the ship only
- General average means the loss (jettison) and the expenditure, voluntarily incurred, to prevent the entire loss of a vessel and her cargo on board.

How to insure

a) Through suppliers

In case of contracts placed CIF or "freight and insurance extra at cost". The only advantage of this method is, that it relieves the buyer of the task of making the insurance arrangement. The disadvantages are many and often less coverage is obtained at much higher premium this way.

b) Self- insurance

This is when the buyer decides against insuring outside and chooses to bear the risks of transportation. This is quite a common practice for consignments of small value where the administrative work involved with any commercial insurance is not warranted.

c) Floating policy with an Insurance Company

This method is adopted by many commercial firms with a regular flow of shipments. A floating (or open) policy is the result of negotiation between parties. The larger the amount of business for the insurers, the better the terms they are prepared to offer. The consignees have the advantage in this case of dealing with the same insurance agents under the same terms and with a standardized method of reporting claims.

Insurance documents

Apart from the insurance policy itself, insurance documents are issued to cover consignments in transit. These documents include:

a) Insurance certificates

These are a furtherance of the policy issued to cover consignments in transit, to describe them, the journeys, the amounts covered, agents to contact at destination and other details relevant to cases.

Insurance certificates are signed by the underwriters and the original certificate is normally required in the set of documents to be presented to a bank for a transaction covered by a letter of credit. When not required for banking purposes, and to cut down on administrative work, certificates can be replaced by much simpler notices of insurance where only the agent to contact at destination need be added. This can be arranged by agreement between the holder of a floating policy and the underwriters.

b) Survey reports

This is the document established by the insurance company's agents at destination, when consignments are received in bad order. Since survey reports are costly, they should be requested only when it is expected that the loss or damage will exceed the figure considered reasonable by the underwriters. The survey report will be the basis of settlement of an insurance claim and

it can be accompanied by an estimate of repairs approved by the surveyor when applicable.

The fees levied by the surveyor for preparing his report is payable by the party who requested his services, but are reimbursable by the insurance company.

Insurance claims

Processing an insurance claim involves administrative work, correspondence and accounting. It is not worth putting this into motion to recover small amounts, and claims involving compensations under say, $25 or $ 50, for instance, can well be dropped. A minimum level should be determined by negotiation. There is a difference between processing an insurance claim and the provision of replacements. A small and inexpensive spare part may be essential and urgently needed, but its procurement should not be the subject of an insurance claim.

An agreement should be reached with the insurer as to the amount under which no survey will be required, a report signed by a designated official being deemed sufficient by the underwriters to take a claim into consideration. This arrangement however does not relieve the consignee of sending letters of claim to the responsible party.

The following documents are required to process claims:

- Survey report or Senior Officer's report, according to the extent of damages.
- Estimates and/or invoices for the cost of repairs or for local purchase of replacement parts, whenever possible, approved by the surveyor to facilitate settlement.
- Copy of the invoice for the original shipment.
- Copy of claim letters to the responsible party and their answer.
- Short-landing certificates or certificate of loss when entire cargo is missing.
- Copies of invoices for replacement or spare parts which had to be procured and sent.

Note: *A successful insurance claim will not compensate for the inconvenience caused to the end-users by arrival of supplies in bad order therefore; it is advisable to consider safety before cost.*

The use of container services, full load or consolidated services is recommended whenever possible, as this offers the best protection.

Clear shipping instructions are necessary to secure the best possible handling.

Supplies, even by post parcel must always be sent with a timely notification and supporting documents being issued to the end-user.

General

In most instances, UN purchasing and shipping can be described as a triangular operation. There is a buyer, a supplier, and a receiver. On many occasions, the three parties are in different countries, if not on different continents. Directing the movement of supplies, i.e. shipping, can be done in different ways.

Dispatch arrangements by the buyer

For surface shipments, this can be achieved only if the buyer is located in a port city, where the numerous contacts for booking consignments, arranging delivery and processing documents can be made by the buyer himself. It requires a well established shipping department and is justified only in case of a large flow of cargo to be sent from that particular port.

For airfreight traffic, direct contact with carriers without intervention of freight forwarders, can be more easily arranged. Here again, a proper shipping office, a delivery service to and from the airport, direct access to the customs for clearances in and out, as well as agreement with carriers for payment of air freight charges are required. And of course, stocks of airway bills from the various airlines are needed.

Dispatch arrangements by suppliers on behalf of the buyer

This is the basis of contracts placed CFR/CPT, CIF/CIP, or following instructions on orders such as "freight and shipping charges (most often including insurance) at additional cost". Orders placed on CFR/CPT, or CIF/CIP, terms mean that suppliers have quoted a price which included the value of the goods and all shipping cost up to port/airport of arrival (CFR/CPT) or the value of the goods, all shipping cost and insurance up to port/airport of arrival (CIF/CIF). Suppliers are therefore, responsible for the shipping arrangements, either directly themselves or through their own forwarders most of the time. This should be in accordance with shipping instructions they may have received from the buyer or according to their own best judgment if they have no specific instructions.

Dispatch arrangement made through forwarding agents

Forwarding agents are the nearly unavoidable intermediaries whose work is to ship goods on behalf of their many principals. When a contract is "ex-works" or FOB, the choice of the forwarder lies with the buyer.

There is a difference whether a forwarding agent is selected by the supplier or buyer. A forwarder works for and is responsible to his principals, i.e. to those from whom he receives a mandate and who pay him for his services.

A forwarding agent appointed by a buyer is in fact the buyer's representative on the spot with the specific mandate to look after interests of his principals, the buyer, and not after the supplier's interest. This can be very important should an incident occur at the time of delivery. Forwarders appointed by buyers can also perform other functions such as:

- Keeping in touch with suppliers and sending them reminders when orders are falling behind their delivery schedule.
- Consolidating orders for joint dispatch, thus reducing overall cost of transportation and facilitating receipt of orders at destination by making one instead of several shipments.

General

The cost of transportation represents a significant proportion of the total cost and time involved in getting a given item of emergency relief to its intended destination. In this context, it is important to be able to identify the options available in any given situation, so that the "most optimal" solution to a specific need can be met quickly and conveniently.

When purchases are made from a number of supply sources and require to be delivered to some common point of dispatch for forwarding to one destination, it would usually involve transshipment of sections of the eventual whole consignment. The transshipped sections may use different modes of transportation to reach the common point of consolidation of the whole shipment.

Some cost comparisons

It is important to remember that the cheapest mode of transport does not necessarily give the lowest landed cost at site. In fact, in some instances it is seen that air freight can work out to be the cheapest form of transportation overall. This can sometimes be the case when supplies need to be delivered to inland locations from sea ports and can require additional handling for maybe two or more transfers between different modes of transportation to the eventual end-users.

As a general rule however, air freight will be more expensive than other options; often, the cost of air freight is found to be almost double that of sea freight. However air freight can still be preferable where there is significant risk of damage to delicate or fragile cargo, or where the time element is of over-riding importance.

For further information on Shipping & Incoterms please check the following link:

http://www.undp.org/procurement/documents/UNDP-Shipping-Guide.pdf

Notes

Notes

Chapter 6 USEFUL REFERENCES

USEFUL REFERENCES

- www.humanitarianreform.org
- http://ocha.unog.ch/cr
- http://www.icrc.org/emergency-items/
- http://www.supply.unicef.dk/Catalogue/
- http://www.unhcr.org/publ/PUBL/471db1092.pdf
- http://www.ungm.org/SustainableProcurement/moreInfo.aspx
- http://www.ungm.org/Info/Links.aspx
- http://www.unlb.org/sds.asp
- http://www.plastic-sheeting.org/
- http://www.unhrd.org/catalog.asp
- http://ocha.unog.ch/cr/register.asp?MenuID=1&MenuEntryID=5&SearchTypeID=1

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