

SPECIFICATION NO : DORCE T1063
BUILDING TYPE : DEMOUNTABLE CONTAINER

1. GENERAL:

Containers are demountable and are designed to allow an easy dismantling and erection for several times.

Design calculations and serviceability limit checks are made according to the related Simandou Design Criteria and ETAG 033.

The model has been analyzed by finite element method software, Sap2000 program V.14.2 (CSI, Berkeley California). All steel frames are cold formed sections which are analyzed with Sap2000 analysis program according to EN 10219.

The outline, architectural and production drawings are prepared using AutoCAD2012.

Galvanized coated bolts and nuts are used for the connections.

2. MATERIALS CONFIRMITY WITH THE INTERNATIONAL STANDARDS:

Structural steel	DIN EN 10025/S235JR/St 37
Galvanize coating	DIN EN 10327/DX51 D+Z
Bolts and nuts	DIN EN ISO 8673, DIN EN ISO 4032, DIN EN ISO 4017, DIN 933, DIN 934
Cement Board	TS EN 634-2, TS EN 13986 Fire Resistance: B1 class acc. To DIN 4102-1, B class acc. To DIN EN 13501
Rock Wool	TS 901-1 EN 13162, EN 13172 Fire Resistance: Non-combustible, TS EN 13501-1 and A class acc. to DIN 4102-1, heat resistance up to 750 °C.
Electrostatic Powder Coat	ASTM D 2794 impact resistance EN ISO 2409 adhesion
Cement Board Paint	EN ISO 2815 Buchholz hardness TS 6884, ASTM D 3359 cohesion
UPVC Sewage Water Pipes	TS EN 275-1 EN 1329-1
PPRC Clean Water Pipe	TS 9937, DIN 8078, TS EN ISO 15874-2

3. THERMAL PROPERTIES:

Thermal Transmittance (U Values) of the main structural components are as noted;

External Walls	U= 0,460 w/m ² k
Roof	U= 0.440 w/m ² k
Base chassis	U= 0.650 w/m ² k
Windows	U= 2.900 w/m ² k
External Doors	U= 0,592 w/m ² k

Supporting calculations to BS3632:2015 refer (attached)

4. SUPPORT STRUCTURE:

Columns and Frame Profiles	Floor and ceiling frame profiles, secondary profiles and columns are made of 2 layers of undercoated and corner columns are electrostatic powder coated steel sheet. Flashings are 2 mm thick UV resistant RAL 9002 colored polyester electrostatic powder coated (kilned at 200°C) galvanized steel sheets.
Imposed Loads	All units will be delivered as flat packed and assembled with galvanized bolts and nuts at site. Roof live load: 60 kg/m ² Design Wind load: 110km/hr

5. CORROSION PROTECTION

All required precautions should be taken against the weather conditions and in accordance with the 10 years of design life referred to in the contract documents. Dacromet coated bolts & nuts, 275 gr/m² galvanized coating where necessary (trusses & purlins, roof cladding, flashings, etc.) and painting system against corrosion should be applied.

Door and window frames may be produced as electrostatic powder coated or alternatively wet painted depending on production method.

Refer to supplier for appropriate touch up paint specification as required.

6. EXTERNAL WALLS

Panel height	2350mm
Wall thickness	80 mm
External Wall Covering	RAL 9002 painted Rock wool insulated sandwich panel Outer layer; 0.6 mm thick RAL 9002 colored steel sheet Insulation; 80 mm thick rock wool (100 kg/m) Inner layer; 0.6 mm thick RAL 9002 colored steel sheet

7. INTERNAL WALLS:

Panel height	2350mm
Wall thickness	80 mm
External Wall Covering	RAL 9002 painted Rock wool insulated sandwich panel Outer layer; 0.5 mm thick RAL 9002 colored steel sheet Insulation; 50 mm thick rock wool (100 kg/m) Inner layer; 0.5 mm thick RAL 9002 colored steel sheet

8. SEPERATION WALLS:

Internal Height (WC cubicle)	1900 mm (100 mm space will be provided underneath)
Internal Height (shower cubicle)	1900 mm (100 mm space will be provided underneath)
Wall Thickness	50 mm
Wall covering	RAL 9002 boyalı painted rockwool sandwich panel Upper layer; 05 mm thick RAL 9002 painted galvanized steel sheet

50 mm thick rockwool insulation core (100 kg/m³)
Upper Layer; 0.5 mm thick RAL 9002 painted galvanized steel sheet

9. ROOF AND CEILING COVERINGS:

Roof Covering Material	0.60 mm thick with 27 mm roll depth, RAL 9002 electrostatic powder coated (kilned at 200°C) galvanized trapezoidal sectioned steel sheets (275 gr/m ²).
Insulation Material	80 mm thick non-combustible rock wool insulation (40 kg/m ³)
Ceiling Covering Material	8 mm thick RAL 9010 painted cement board

10. OVER ROOF:

Roof Cladding Material	Above steel trusses and purlins; 0.60 mm thick 27 mm trapezoidal sectioned, RAL 9002 electrostatic powder coated (kilned at 200°C) galvanized steel sheet (275 gr/m ²)
Insulation Material	N/A

11. SHEDS

Sheds	Sheds will be produced uninsulated. Support system will be made of 2 layers of undercoated and final painted steel sheet. Roof cladding will be made of 0.60 mm thick 27 mm trapezoidal sectioned, both surfaces RAL 9002 electrostatic powder coated (kilned at 200°C) galvanized steel sheet (275 gr/m ²)
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12. FLOOR CHASSIS

Floor Covering	Telecom Rooms; 2 mm thick antistatic PVC based, grey color, welded type floor covering Wet Areas; 2 mm thick textured-nonslip PVC based, grey color, welded type floor covering Other Areas; 2 mm thick PVC based, grey color, welded type floor covering (adhesive, welding wire, PVC skirting at dry areas and skirting cap for wet areas included)
Inner Surface Covering	18 mm thick unpainted cement board
Insulation Material	50 mm thick mattress non-combustible rock wool insulation (40 kg/m ³)
Chassis Steel Frame	Special bended, 2 layers of undercoated steel sheet profiles.

External Surface Cover	0.50 mm thick with 27 mm roll depth, unpainted galvanized trapezoidal sectioned steel sheet.
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Chassis Load Capacity: 250 kg/m²

Floor covering material for First Aid, LSC Clinic, and LSC Medical buildings will be transported separate from the floor chassis in order to be applied on site as overlaid. Accordingly, all required adhesive, welding wire, PVC skirting cap, etc will be loaded on related flatpacks.

13. STAIRS

External Stairs	Supporting frame and steps will be provided. Landing and Steps are made of steel sheet. All elements are hot-dip galvanized. Railing and balustrades are RAL 9002 electrostatic powder coated (kilned at 200°C) electro-galvanized steel sheet (275 gr/m ²)
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14. DOORS

14.1 External Doors

Door Frame	RAL 9002 colored polyester electrostatic powder coated (kilned at 200°C) galvanized steel sheets. Doors shall be equipped with weather stripping to maintain leak proofing.
Door Wing	RAL 9002 colored polyester electrostatic powder coated (kilned at 200°C) galvanized steel sheets and rockwool insulation material in between. **Hydraulic door closures will be provided at all doors. For double doors, push bar will be provided only at the active door. **Insect screen with self-closing mechanism will be provided only for the external doors of Accommodation Units (Same with the one in the Sample Container in the Factory, only a spring will be included for self-closing mechanism) **Grills will be provided on all electrical room doors (except for Guard House Electrical/Telecom Room door)
Door Handle and Lock	Metal door handle and cylindrical lock
Door Dimensions	(D1) 900 x 2030 mm (D1M) 900 x 2030 mm (with insect screen) (D1G) 900 x 2030 mm (electrical room door with grill) (D4) 1900 x 2030 mm (D10) 1900 x 2210 mm (D12) 900 x 2225 mm (telecom room door)
Water Drain	RAL 9002 electrostatic powder coated (kilned at 200°C) galvanized steel sheet

14.2 Internal Doors

Door Frame	RAL 9002 colored polyester electrostatic powder coated (kilned at 200°C) galvanized steel sheets.
Door Wing	RAL 9002 colored rock wool sandwich panel. Outer; 0.50 mm thick RAL 9002 colored galvanized steel sheet In Between; 50 mm thick rockwool insulation Inner; 0.50 mm thick RAL 9002 colored galvanized steel sheet Ventilation grill will be provided only for wc room doors (in accordance with drawings)
Door Handle and Lock	Metal door handle and cylindrical lock at room doors Lock with indicators will be supplied for cubicles and room with single toilet (except for Accommodation Units). Toilet room doors having cubicles inside (like the ones in Offices and Camp Admin building) will not be fitted with handle and locks, only self-closing mechanism will be provided for these doors.
Door Dimensions	(D2) 740 x 1980 mm (D2G) 740 x 1980 mm (with grill) (D3A) 650 x 1900 mm (WC separation door) (D3G) 640 x 1980 mm (wc door with grill) (D5) 1480 x 1980 mm (D8) 950 x 1980 mm (door for disabled people) (D8G) 950 x 1980 mm (disabled wc door with grill) (D9) 950 x 2210 mm (Telecom room) (D11)1480 x 2210 mm (D21) 740 x 1980 mm (swinging wc door)

15. WINDOWS

Window Frame	RAL 9002 colored polyester electrostatic powder coated (kilned at 200°C) galvanized steel sheets.
Window Wing	RAL 9002 colored Aluminum frame with 4+12+4 mm double glazing (frosted glass at band windows) Aluminum framed, plastic wired, removable fly screens will be provided at all large and band windows. Venetian blinds will be provided for large windows only in Office Buildings, Camp Admin, Medical Buildings, Fire Station and office areas in other buildings. All Large windows and band windows will be tilt opening type.
Window Handle	Aluminum handle
Window Dimensions	Large Windows (W1) 938 x 1000 mm Band Windows (W2) 800 x 400 mm
Water Drain	RAL 9002 electrostatic powder coated (kilned at 200°C) galvanized steel sheet

16. ELECTRICAL AND TELEPHONE INSTALLATION:

Not Included

17. SANITARY INSTALLATION:

All installations are surface mounted.

Generic Specification subject to verification

Clean Water Pipes	PPPC
Wastewater pipes	UPVC
Wash basin	Accommodation Type A, recessed type wash basin with above and below cupboard vanity unit
	Ablution Block Male, Ablution Block Female, General Purpose Ablution semi recessed type wash basins on compact laminated countertop; All other wash basins ceramic pedestal type
Water closet Eastern Type toilet	Self-reservoir, double cistern, ceramic Ceramic, valve controlled pipe reservoir
Urinal & separation panels	Ceramic
Taps	Doctor rooms and examination rooms of LSC Clinic and LSC medical buildings - elbow operated taps; All other taps will be knob controlled w/gasket All taps in Ablution Units will be self-closing percussive type
Shower Tray & Cabinets	80 x 80 cm dim., acrylic-Monoblock
Toilet and shower Accessories	Shower curtain
Laundry Troughs & Urinal Troughs	Accessories for disabled toilets and showers will be provided according to attached drawings. For each shower, venture type shower head will be provided.
Kitchenette Sink	Stainless steel; in dimensions according to attached drawings (only for Ablution Block Female and Ablution Block Male)
Janitor sinks	Stainless steel; in dimensions according to attached drawings (only for General Purpose Ablution and Ablution Block Male) With draining,chrome coated stainless steel sink and 1 mm thick electrostatic powder coated stainless sheet (width x length x height; 600x1000x850 mm) Stainless steel sinks for mop cleaning will be provided in janitor rooms. The height of the sink surface will be 500 mm from the floor level.
Water Heaters	Not Included

Only hot and cold water pipe stub tails to appliances / apparatus for connection to site installed hot and cold water supplies shall be provided.

PVC floor drain will be provided.

All sanitary piping tails shall be terminated 100 mm beyond external building line

18. FIRE DETECTION & FIGHTING SYSTEMS

Not Included

19. AIR-CONDITIONING

Not Included

20. FURNITURE

To be agreed under separate documentation

21. CENTRAL HVAC SYSTEM

Not Included

22. LAUNDRY & GYMNASIUM EQUIPMENTS

To be agreed under separate documentation

Elemental U Value Calculations on Frame Components to BS3632 : 2015

DORCE 80mm Wall Panel			
u Value Calcs			

Element Description	Element Thickness	Thermal Conductivity	Thermal resistance
	L (m)	k	
External Surface resistance	-	-	0.04
External steel facing	0.0006	54	0.00
80mm Rockwool Core	0.0800	0.04	2.00
Internal steel facing	0.0006	54	0.00
Internal surface resistance	-	-	0.13

Total Resistance 2.17

80mm Wall Panel 'U' Value 0.46

DORCE 80mm Ceiling Panel with Canopy Roof			
u Value Calcs			

Calc A.- Cross Section through Wall

Element Description	Element Thickness	Thermal Conductivity	Thermal resistance
	L (m)	k	
External Surface resistance	-	-	0.04
External steel canopy roof sheet (0.6mm thk)	0.0005	54	0.00
Air Gap			0.04
External steel facing (0,6mm thk)	0.0006	54	0.00
80mm Rockwool Core	0.0800	0.04	2.00
Internal steel facing (0,6mm thk)	0.0006	54	0.00
8mm thick cement board (based on Y wall)	0.0080	0.12	0.07
Internal surface resistance	-	-	0.13

Total Resistance 2.28

Overall Roof 'U' Value 0.44

DORCE Cassette Floor			
u Value Calcs			

Element Description	Element Thickness	Thermal Conductivity	Thermal resistance
	L (m)	k	
External Surface resistance	-	-	0.04
External steel facing (0,5mm thk)	0.0005	54	0.00
50mm Rockwool Core	0.0500	0.04	1.25
18mm thick cement board (based on Y wall)	0.0180	0.12	0.15
Internal surface resistance	-	-	0.10

Total Resistance 1.54

Overall Floor 'U' Value 0.65