

# General Technical Specifications

## Materials for Construction Works

*Description of the materials given below is not detailed as standard norms. It is intended to describe the most significant characteristics of material items used for the construction of individual houses (8X8; 8X10) for the IDP families in Georgia. In case of dispute the DRC reserves the right to refer to standard norms applied by **DRC**.*

### **Item1: Timber**

Timber for roof construction; pine or spruce (unless other type approved); good quality sound timber with straight edges and cut to exact even measurements, without any damage, with no knots larger than 30% of the cross section area of each item, no knot holes, no infestations, no moulds, no rotteness, no tree bark, no warping. Timber for floor should be dry, planed, without any damage.

Timber **80cm x 20cm x 600cm**

Timber **8cm x 16cm x 600cm**

Timber **8cm x 8cm x 600cm**

Timber **4cm x 15cm x 600cm**

Timber **5cm x 5cm x 600cm**

### **Item 2: Ceiling**

Painting of Ceiling of rooms with high quality emulsion paint.

Bathroom-Plastic tiles **25cm X 1cm X 600cm** with metal frame, distance between beams 60cm

### **Item 3: Floors**

Laminated parquet 9mm.

Corridors and bathroom-High quality ceramic tiles.

### **Item 4: Roofing**

Painted roof sheets thickness 0.5mm, funnels and gutters- painted roof sheets Thickness 0.5 mm, with holders in every 40 cm

### **Item 5: Ridge Tiles**

lat painted roof sheet thickness 0.5mm, width 30 cm

### **Item 6: Concrete Blocks**

Pumice Concrete Blocks, first class, dimensions 390(±8)mm(L) x 190(±6)mm(W) x 120(±8)mm(H), Weight maximum, 12 kg/block, M-7.5Mpa, no lime content, no salt content, no surface or edge deformations. If, following contract award, a block sample with a slightly lower average volume is approved, then the Unit Price would be decreased in direct proportion

### **Item 7: Bricks**

Ceramic bricks, first class, dimensions 250mm(L) x 120mm(W) x 65mm(H), Weight maximum, 2.5kg/brick, M-170, no salt content, no surface or edge deformations

### **Item 8: Windows "PVC"**

Inward double opening (vertical axis), PVC window with factory insulated double sealed glazing unit (4mm +minimum 12 mm vacuum+4mm); weather proofed execution, UV- resistant white colored PVC window frame of minimum 58 mm overall thickness with an inner reinforcing metal profile mounted,

frame walls min.3mm thick, surrounded by PVC sealing strip; strong metal locking mechanism, zinc or chrome plated handle.

120cm(W) x 150 cm(H) (external dimensions of window frame);  
four section windows with one opening

60cm(W) x 60cm(H) (external dimensions of window frame);  
one section windows with one opening

**Item 9: Doors, as described below or functional and qualitative equivalent:**

**External door**, Double-framed iso-aluminum 90cm x 220 cm, right or left hand inward opening,

**Internal door**, inward opening; mix of right& left-hand opening. Door thickness minimum 58mm; White PVC door frame width min. 58 mm, with metal profile installed inside, frame width min. 3mm. Min 3 hinges, ready for installation (minimum frame dimensions 4cm x 12cm), frame surrounded by PVC sealing strip, lock, two keys and door handle.

**Item 11: Cement**

Cement, PC30p-45, packed in 50kg, bags.

**Item 12: Gravel**

Gravel, washed, or crushed stone for concrete construction:

0.1-4mm approximately 43%

4-8mm approximately 20%

8-16mm approximately 20%

16-31.5mm approximately 17%

**Item 13: Sand**

Sand, washed, **Free of clay** or any other contamination; high quality suitable for plastering, typical grading mix 0.1mm–1.2mm;

**Item 14: Reinforcement steel**

Reinforcement steel, compatible to Georgian standard, Class A-III, ribbed finish with 3400 kg/mm<sup>2</sup>.

Reinforcement steel, compatible to Georgian standard, class A-1 diameter smooth finish with 2100kg/mm<sup>2</sup>.

**Item 15: Thermal insulation**

Installation of thermal insulation with pumice 5cm

**Item 16: Damp proof membranes**

Polyethylene film thickness minimum 0.2mm

Tar paper in rolls, minimum 1.5mm thick, one surface, polished.

**Item 17: Water/sanitary installations**

Materials and fittings for equipping a bathroom (with existing inlet and outlet connections). Inside and outside network of Water supply and sewerage system has to be installed with proper diameter plastic pipes (refer to drawings), with connecting details and Hand shut-off valves.

## **Item18: Electrical installations**

Distribution board with 1 phase circuit breakers 220 V/10A.  
External electric wiring cable with double insulation and copper cables (3X6 mm<sup>2</sup>)  
Internal electric wiring cable with double insulation and copper cables (3X2,5 mm<sup>2</sup>)  
Internal electric wiring cable with double insulation and copper cables (3X1,5 mm<sup>2</sup>)  
Single-phase, three prong socket outlet 220V/10A  
Single-phase, two prong switch 220V/10A

All Cables suited for use in the open, in dry, damp and wet environments. Temperature range from –20°C to +70°C;

## **LABOUR CONTRACT ANNEX**

### ***Description of Construction Work***

#### **Formwork**

Fixing the shuttering boards, thickness t = 2.5cm, for the rising wall  
Fixing the shuttering boards, thickness t = 2.5cm, for the columns  
Fixing the shuttering boards, thickness t = 2.5cm, for the window and door lintels.

#### **Concrete works**

Concreting the entrance wheelchair with concrete M-250.  
Cement screeding on the floor 40 mm thick with concrete M-200  
Concreting of the walkway with concrete M-250, thickness 15 cm, width 100 cm

#### **Reinforcement steel works**

Bending of the A-I reinforcement steel and installation in the columns and lintel of the wall. For the links reinforcement steel, A-I to be used (refer to drawing).

#### **Masonry works**

Building of walls with hollow concrete blocks 12/20/40cm. not less than M-50. Binding material is sand-cement mixture not less than M-50.

#### **Roof works**

Fixing of the timber for the roof structure according to the design.  
Wood should be dry, no knots and no holes.

Covering the roof structure with metal tiled roof sheets 0.50 mm thick.

#### **Plastering**

Internal plastering with sand-cement mixture not less the M-50, thickness 3 cm. Plastered surfaces of the walls should be even, smooth and without cracks.

#### **Installation works (joinery)**

Installing the floor wooden boards (37 mm thick) above the concrete floor. Antiseptic treatment of wooden materials.

Installation of external door with the following dimensions 90/2.70. The gaps should be filled with expansion foam. plastering around the door should be applied after installation.

Installation of Internal doors with the following dimensions 90/210cm. The gaps should be filled with expansion foam. plastering around the door should be applied after installation

Installation of the windows dimensions according to the specifications. The gaps to be filled with expansion foam. Plastering around the window should be applied after the installation.

## **Concrete**

Concrete and reinforced concrete works must be executed completely in accordance with regulations for concrete and reinforced concrete.

Concrete must comply with the designed type of concrete; must be laid down in layers with proper compaction, including vibration (poker vibrator powered by electricity or mini compressor).

Concrete M 300:

Gravel 0.5 – 2.5cm 1.15 m<sup>3</sup>

Cement M-400 400 kg mixture

## **Plastering**

Treatment and quality of material for plastering must guarantee durability of at least 50 to 60 years.

When repairing a damaged house, the following is considered as defective and requiring replacement:  
soft and weak lime mix, which is loose or bending under pressure  
worn-out, cracked, frozen, burned or damp plaster

New plaster to be: mixture of cement: sand, and water, in proportions: 1: 3: 6

Cement mortar for block/brick masonry: mixture of Cement: sand, and water, in proportions: 1: 3:8

## **FACADE**

Plastering external walls on metal net (1,1mm 20X20cm). painting of the external walls with façade paint.

## ***Description of Electrical Installation Work***

### **Technical Description / Scope of the Work**

*(Guidelines for typical content)*

The purpose of this Technical Description is to inform the sub-contractor who will implement the project about the Scope of the Work.

#### **Cable Distribution**

The cable dimensions depend on voltage drop, site conditions, permitted load current and short circuit current.

The power supply has to be provided by cable PP00/0 3x25 mm<sup>2</sup> from the nearest low voltage wooden pole. A Cable Connection Cabinet (CCC) with three 50 A fuses and corresponding bases must be mounted by electric company.

Electrical installation for any future domestic water heaters, future wall mounted heaters and single-phase sockets has to be provided by cable PP-y 3x2.5 mm<sup>2</sup>. Installation must be embedded in the plaster.

In normal working conditions in all working areas it is planned to have at least single-phase sockets with earthing (grounding) core in PVC boxes mounted in the wall (0.5 m from the floor). The bathroom must have a single-phase waterproof socket with a cover at a height of 1.1 m.

Domestic water heater connections have to be fitted directly in the cable terminal box of the water heaters. The minimum length of the free end of the connection cable must be 1.5 m. The height of this cable must not be less than 0.9 m from the floor.

#### **Lighting Electrical Installation**

Electrical installation for the lighting must be undertaken using cable PP-y 3x1.5mm<sup>2</sup>. The light fixtures will be attached on the ceiling.

The lighting switches must be placed on the opening side of the door. The height of installation of these must be 0.9 m to 1.1 m from the floor.

#### **Main Distribution Board**

The Main Distribution Board is planned to be mounted by Distribution Company.