

ATTACHMENT I

Technical description for the Construction of Large EU Visibility Signboards

- I. Construction of panels**
- II. Transport**
- III. Installation**

I. Construction of panels

Assembly frame (A)

Profiles (100/60/3) should be 45 degrees angle cut and joined, and the joints shall be welded, sanded (polished) and puttied as needed.

Frontally, the visible crossbar width of the frame B should be 60 mm (see sketches attached).

Both legs should be closed in from the lower side with an iron plates, dimensions 200 x 160 mm (50 mm on each side of the 100/60 profile).

The complete steel construction shall be hot dip galvanised, painted with primer paint and then finally lacquered in colour chosen by the investor.

The foundation footing should subsequently be welded with pieces of ribbed reinforcing iron R10 to R12, in order to integrate the construction as well as possible within the concrete footing.

Frame holding tin sheet with graphics (B)

Profiles (40/30/20) should not be 45 degrees angle cut, and the joints shall be welded, sanded (polished) and puttied as needed.

Frontally, the visible crossbar width of the frame B shall be 40 mm (see sketches attached).

The complete steel construction shall be hot dip galvanised, painted with primer paint and then finally lacquered in colour chosen by the investor.

Frame (C)

The profiles (60/60/3) should be 45 degrees angle cut, and the joints shall be welded, sanded (polished) and puttied as needed.

The complete steel construction shall be hot dip galvanised, painted with primer paint and then finally lacquered in colour chosen by the investor.

Anti-vandal frame (D)

Profiles (L25/25) should be 45 degrees angle cut, previously cutting holes and milling them so that flat-headed screws are in line with the frame surface (see sketches attached).

The complete steel construction shall be hot dip galvanised, painted with primer paint and then finally lacquered in colour chosen by the investor.

The frame should be screwed together after putting the tin sheet with graphics in frame B and frame C, through previously cut and milled holes, as mentioned above.

Galvanized tin

On both frames marked with B, each of the three tin panels, dimensions 1000 x 2000 mm, 1 mm thick shall be assembled, so that they form a surface of 3000 x 2000 mm (as presented in the sketch). The tin shall be joined to frame B by riveting, taking care that rivets are evenly distributed (because they will be discretely visible underneath the foil). After riveting, rivet caps should be gently sanded (taking care that the caps are not sanded enough to lose their bearing capacity), so that they are visible as little as possible after sticking the foil.

The manufacturing of the panels shall be controlled in the workshop by UNOPS representative.

Technical criteria for graphic printing, application and assembly to the frame

The graphics shall be printed on self-adhesive PVC foil, 100 microns thick, using solvent print technique, with subsequent machine application of protective matte PVC foil, 100 microns thick.

Graphic dimensions on one side (the panels shall have identical graphics on both sides): 3000 x 2000 mm. The printing shall be done in three segments (because of tin dimensions), format 1000 x 2000 mm.

When printing and plastifying, attention should be paid to the necessary foil folds (2-3 cm) along the lines joining the tin sheets, in order to prevent foil deformation in time, which would make water leaks possible and create (visual) creases on the junctures.

After this, the mentioned foil system shall be applied on the cleaned galvanized tin using machines, and then the graphics (in three segments, as in sketch) assembled on frame B.

UNOPS designer shall overview the printing process and approve the authenticity of colours and quality of print, upon agreement with the Contractor. The pre-press shall be provided by UNOPS.

II. Transport

The panels shall be delivered and installed simultaneously in all 22 Programme municipalities (list provided in table attached), to the specified locations, for which all necessary permits are issued by local self-governments and authorised public institutions.

It shall be assumed that there will be no electrical connection or water available on site (generator should be provided).

It shall be assumed that the panels shall be delivered and installed in municipalities grouped in relation to transport limitations and installation options (the number of panels that can be installed per day, for example). Review process proposal and propose plan of installation having in mind the above limitations and installation technology.

For transport cost estimation, take into account the circumstance that the frame shall be installed at least two days prior to the panels with graphics.

In relation to the proposed installation plan, with the assumption that all conditions for installation exist (referring to conditions related to the necessary permits, graphic content, etc. provided by UNOPS), state the overall cost for the transport of panels.

III. Installation

Propose installation procedure for the required dimensions and concrete quality

Phase 1

Dig foundation pit, dimensions 80 x 140 x 100 cm (width x length x depth). After placing a layer of "slim concrete", 5 cm thick, the assembly frame (A) needs to be fixed and secured from overturning. Prior to that, the frame shall be put in ideally vertical and orthogonal position using level or laser. There is a sketch of the proposed 5/8 cm wooden boards construction. This construction can be used several times. After this it is necessary to carefully place MB30 type concrete in the foundation (add rapid concrete bonding additive) and even out the top side. During concreting, the concrete shall be distributed around the construction using a lath, in

order to prevent air plugs, and for the construction to integrate well with the concrete. After finishing the job, it is necessary to transport excavated ground to the landfill, or disperse it on the terrain, if possible.

This phase shall be controlled and approved by UNOPS representative or engineer.

Phase 2

After initial concrete bonding for a minimum of 48 hours, both pre-assembled frames (2 pieces x B+C+D with graphics applied on galvanized tin and attached to frame B) shall be attached to assembly frame (A). Taking into consideration frame weight with tin and the frame, the best way should be found in which to put it up safely at the required height.

Both frames should then be fixed to the Assembly frame (A), using workshop welded and perforated assembly plates (E), as in the attached sketch. Attach using M10 screws with machine head (tighten using spanner or wrench). In accordance with this solution, an alternative way or position of plates can be proposed, in order to make the assembly faster or safer.

This phase shall also be controlled and approved by UNOPS representative or engineer.

The bidder must provide guarantees for corrosion protection of all metal elements and adhesiveness, stability and sustained quality of the printed self-adhesive PVC foil for at least two years.