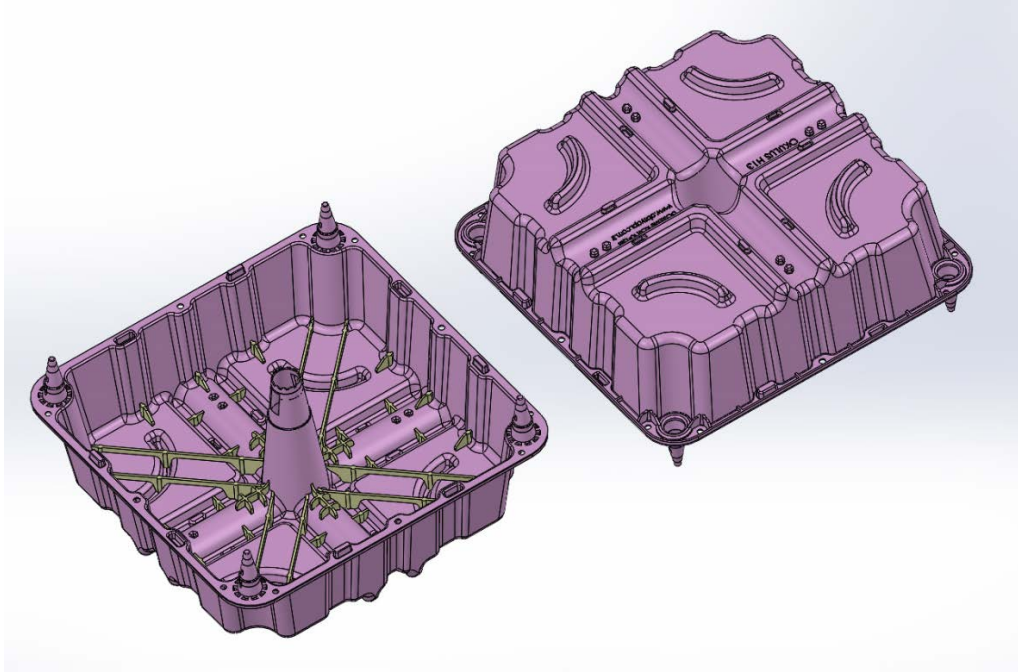


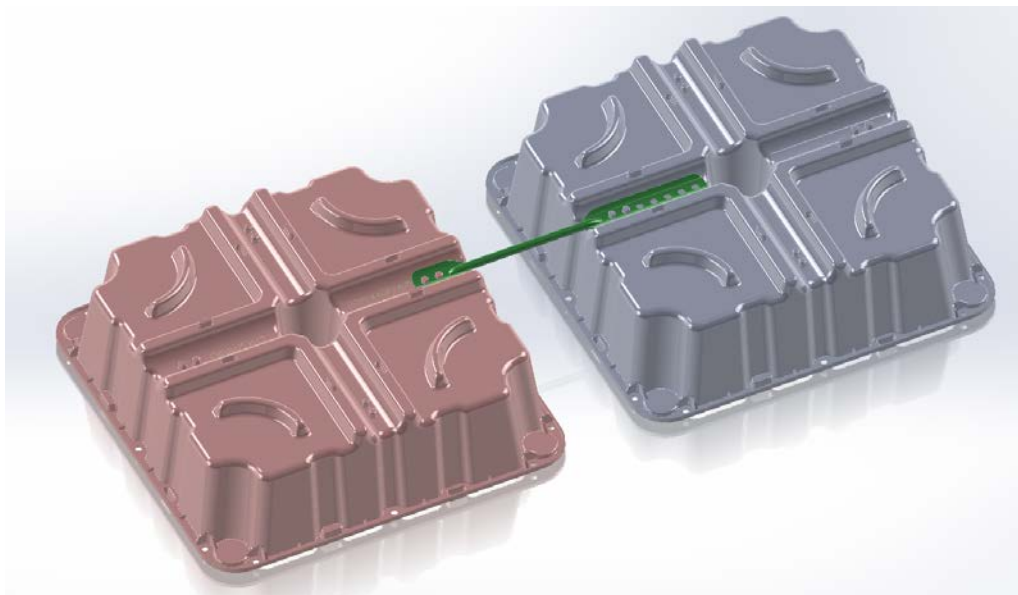
## Technical Specification | Constructing Voided Slabs with Disposable Formworks

**Description of work:** Constructing a biaxial voided reinforced concrete slab with perpendicular beams and appropriate thickness as described by the design using Volimax type disposable formworks manufactured by ABS YAPI ELEMANLARI SAN. TİC. LTD. ŞTİ. which are made of recycled polypropylene in the shape of a truncated pyramid, with 52 x 52 cm width and length, height calculated as per required by the project design, with grooves and spacers on the top for placing the upper reinforcement steel, with conical feet at the bottom at lengths as per required by the project design, with a conical port at the center, to control the concrete flow during concrete casting. The disposable formworks are placed in a grid format with a precalculated distance from each other on the flat slab formwork over the lower reinforcement steel.



Sample 1: Voided slab disposable formwork, single-use configuration

The upper part of the disposable formwork must be specially shaped so that the top slab reinforcement can be placed homogeneously at a distance of at least 2 cm from the formwork. In addition, for the disposable formworks to be positioned among themselves in accordance with the project, they must be interconnected with adjustable spacers made of polypropylene.



Sample 2: Use of adjustable spacers between voided slab disposable formworks

Additionally, there should be rings on the skirts of the formworks to connect the formworks to the steel reinforcement with wire. There should be a conical control and feeding port (central cone) in the center of the disposable formwork so that the operator can control the flow of concrete under the formwork during casting.



Sample 3: Connecting to the steel below and controlling concrete casting through the central cone

Disposable formworks should be able to be used in single or double configuration. The conical feet under the disposable formwork should be at least 7 cm in accordance with the standards and regulations, but according to the requirements of the static project, they should be able to be extended up to 12 cm by means of cones made of polypropylene that can be attached on these feet.

Ready-mixed concrete with the strength and consistency specified in the project should be used during casting. In any case, the compressive strength of the concrete to be used should not be less than C20/25 and its slump should not be less than S4. A slump test should be performed on each concrete mixer. The casting process should start from a corner of the floor. In the first stage, casting should be done on the entire floor until the feet of the disposable formworks are covered. During concrete pouring, the central cone should be checked to ensure that the concrete goes under the disposable formwork. In the second stage, the concrete of the entire floor must be completed starting from the same corner. For the formworks not to float during the second casting, casting should start after the concrete poured in the first stage reaches a plastic consistency. In any case, it should be checked whether the formworks will float or not before the second casting. Redundant vibrators should be used at all stages of casting.



Sample 4: Plasticization of the concrete and second stage of casting

If the area to be casted is larger than 1,000 m<sup>2</sup>, the use of double concrete pumps is highly recommended. Leaving vertical cold joints shall be evaluated with the project designer in charge.

At least 21 days should pass after concrete casting for 25-35 cm slab thicknesses before the concrete formwork is removed. For higher floor thicknesses, either the project designer should be consulted or at least 30 days should pass.

Disposable formworks should not emit pollutants, and the manufacturer should have ISO 9001 certification. The technical and administrative team of the manufacturer should be capable of answering all the

questions of the project authors and field supervisors, both during the project phase and during the implementation.

All application projects, user manuals, assembly diagrams and on-site technical support should be included in the product price.