BALTI KIVITEHAS

Instructions for the use of concrete masonry units

The following will give you some basic principles and advice which should be followed when using concrete masonry units.

Laying masonry units

a. Mortar is placed on all edges of masonry units. Thickness of joints ca 10 mm.
b. According to one's wish, different types of joints may be used: clean joint, flush joint, round joint, V-shaped joint.
c. The height of a wall laid in one day depends on the mortar, usually ca 6–8 rows.
d. In order to fill vertical joints, blocks are beforehand placed upright on their ends and two layers of mortar are placed on the edges, both 30 mm wide. When a block is placed on the wall, a strip of mortar is pressed against the previously fixed block and the block is then levelled in place.
e. After laying the blocks, all joints must be jointed in order to achieve the necessary weatherability. It is not recommended to joint after freshly laid mortar, as the water pressing on the surface of the joint washes concrete out from the surface and the colour becomes uneven. Jointing must be done when the mortar is still plastic.
f. With concrete elements (cellar walls, basements) which may become saturated with water, we recommend to plaster the wall before waterproofing. Plastering or waterproofing is also necessary for other construction elements where water may damage the masonry.
g. In case of external walls from fallow blocks we recommend to use flush or concave joint, which avoid water forcing through the block joints in case of heavy rain.

Mortar used

a. We recommend using concrete mortar with the strength grade of at least M2.5. We do no recommend using lime mortar.
b. In the interest of mortar workability, use plasticizers. We recommend REBAmix BE, a product of REMEI.
c. When working at a temperature below +3ºC, antifreeze admixture needs to be added and the masonry needs to be protected within 48 hours against freezing over. We recommend not doing masonry work when the temperature of the surrounding environment is below –15ºC.
d. When laying concrete masonry units, coloured preparations may be used or colour pigments may be added to the mixture.

Deformation joints

a. Deformation joints are necessary with all wall materials in order to ease the pressure caused by volume changes.
b. The distance between deformation joints in non-armoured masonry is 6…7.5 m, depending on the construction (openings, posts).

Humidity protection

a. In case of multi-layer walls, the tin apron placed under the lowest row has to be used in order to remove the rain water which permeated the joints.
b. A vertical joint is left open after every 80 cm to the lowest row of the wall in order to enable ventilation and drainage. The same is done at the highest part of the façade if there are no other ventilation possibilities.
c. Tin aprons must be placed on each window and door lintel and there must also be ventilation openings.
d. In case of concrete masonry units it must be taken into account that they have relatively big pores and therefore much faster water absorption and release.

Reinforcing and concreting masonry

a. If masonry is made from hollow blocks, the height of wall which is not reinforced should be the width of 20 blocks, for reinforced wall the width of 30 blocks.
b. It is recommended to reinforce and concrete the lowest and the top horizontal row of a wall made from hollow blocks.
c. In case of a wall made from hollow blocks with eccentric pressure, long lintels or other complicated construction, a constructor should be consulted.
d. The cavities next to openings to which reinforcement is embedded at the crossing of walls must be filled with concrete.
e. Before starting to concrete, mortar must have hardened in joints at least 24 hours.
f. When concreting vertical cavities, the pressure caused by concrete pole to the cavity into which concrete is poured and the complexity of thickening the concrete must be taken into account.
g. It is recommended to pour the height of a story in parts; when concreting the whole height, a check-up opening (which is covered before starting to concrete) in the size of ca 10x10 cm must be cut to the lowest row of blocks in order to check its filling.
h. When concreting in a cold surrounding, filling concrete can not freeze during first 48 hours; it is not recommended to do concrete work at temperatures below –15ºC.

Maintenance

a. When laying the façade, it should be observed that the wall is not smeared with mortar.
b. If mortar should get on the facade, it should be removed when it has solidified a bit.
c. It must be observed that the ventilation openings in the façade are not clogged.
d. The façade may be washed with a power washer when the building is finished. An aqueous10% hydrochloric acid solution can be used for

removing salts, in case of coloured stoned the solution should not be over 3%. Before washing with the acid the wall needs to be dampened with water; do not treat more than 1m^2 at once.

e. Constant spreading of water on the stone surface causes salts to wash out (efflorescence).
f. In order to decrease the water absorption of the surface, hydrophobisators may be used, which make the surface easily washable or hydrophobic.
g. Use only paints and varnishes meant for stone and plastered surfaces when painting the surface.