

SOME BASIC GUIDELINES FOR LAYING REFRACTORY BRICKWORK OR LINING

Certain basic rules exist for the laying installation of refractory bricks or lining. They generally apply for all designs and construction parts of any furnace, pipe, chute, chimney, foundation, tank or any other vessel etc. Some of these rules have been summarized below:

- => Refractory bricks must always be laid horizontally unless the design of the plant requires inclined positions or inclinations as is the case for crowns or inclined planes.
- => The construction dimensions in the design and drawings must always be observed taking the indicated tolerances into consideration. The first refractory layer (course) must be installed with extreme care, aligned and checked before giving the “go ahead” for further brick laying (lining) work.
- => All joints must be filled with the prescribed joint material. Thickness of the joints must be observed taking the indicated tolerances into consideration.

=> All joints must be filled over the entire surfaces with the joint material. It is permissible to apply the mortar with a 'Collar' because there is the danger of hollow spaces forming in the joints.

=> If, due to the size tolerances of the bricks, the prescribed joint thickness can not be accomplished without obtaining 'Naked Surfaces', the person responsible for the refractory design will have to decide if thicker joints can be allowed. This is only permitted as a better solution cannot be found by sorting or changing the shapes. A grinding of the bricks should only be a possibility in exceptional cases.

=> Expansion joints should never contain any contamination, e.g. by insertion of joint templates or by gluing.

=> Refractory bricks which have been already laid can only be readjusted in the direction of the bed or vertical joint.

=> Readjustment of brickwork already laid is not possible if the mortar has started to harden to a greater degree. Depending on the type of mortar used, there will possibly be only few minutes for readjustment once the bricks have been positioned. Sometimes, it may be necessary to remove bricks not placed correctly, clean them, and re-install them once again with fresh refractory mortar.

=> Refractory bricks with smaller spalls, hair cracks or slight inclusions may only be installed (laid) provided these irregularities are insignificant for the proper

functioning of the construction part. This also applies to the rear side of the hot slide layer and for the brickwork behind. The criteria for the acceptance or rejection are indicated in the specifications or must be agreed upon mutually by the customer, manufacturer, and supplier before the start of lining or brick laying work.

=> Brickwork out of refractory materials must be designed in such a way that no hollow space forms. Dust and fly ash can penetrate hollow spaces. This results in uncontrolled pressure buildup which may destroy the refractory brickwork. Damages can also occur by roaming gases.

Source: <http://viewforyou.blogspot.in/2010/04/some-basic-guidelines-for-laying.html>