Spectra-Glaze

Ball, W. H.

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TECHNICAL NOTE

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PREPARED BY W.H. Ball — CHECKED BY — APPROVED BY R.F.L.

PREPARED FOR Dr. F.M. Lea. — DATE May 9, 1957

SUBJECT "Spectra-Glaze"

This note is intended to summarize the substance of conversations held with several individuals and visual observations of two buildings in Windsor, Ontario, which are clad with Spectra-Glaze. Inquiries were initiated by the Division at the request of Dr. F.M. Lea of the British Building Research Station.

Persons Contacted

Mr. Glen Whitman, Vice-President, Burns and Russel Co., Baltimore, Maryland, U.S.A.

Mr. Jack Ryan Jr., Ryan Builders Supplies Ltd., Windsor, Ontario.

Mr. Harry Colthurst, Ryan Builders Supplies Ltd., Windsor, Ontario.

SPECTRA-GLAZE

Spectra-Glaze is a term used to describe concrete masonry units which are faced, generally on one side only, with a smooth surfacing prepared from a resin, pigment or coloured granules, silica sand, and other chemicals.

Mr. Whitman said that the product was developed originally for interior applications. A number of exterior applications had been made on commercial buildings and, except for colour fading, no problems had developed as yet. Only the reds and greens will stand up to external exposure. Blues are poor, and browns fade to a light yellow.

Mr. Ryan and Mr. Colthurst spoke of additional problems with solid colours in the manufacturing process. Apparently they are very difficult to handle and the percentage of rejects has been so high that Ryan's have stopped using them. Coloured granules are now used in a neutral or lightly coloured field and the colour problem can be handled quite simply.

Mr. Colthurst accompanied the writer on a visit to a small shopping centre on the outskirts of Windsor, Ontario, on April 11, 1957, where Spectra-Glaze had been used externally on the front exposure. Green, and cream or light buff blocks had been applied both above and below a canopy which protected large plate-glass windows. The appearance of the glazed surfaces was generally good. Only one block was seen where there was a surface imperfection.

The mortar joints had been pointed with mortar of silica sand and white Medusa cement. There was some evidence of deterioration or lack of bond between the mortar and the glazed facing. Although the white cement-mortar may produce a striking contrast initially it had accumulated dirt and grime. The colour of the mortar joints was not uniform due to unequal darkening. In some areas there may have been surface spalling of the mortar joints which produced a lack of uniformity.

There was much evidence of water leakage on the underside of the canopy but this was probably due to improper design or construction of the canopy-wall junction rather than leakage through the wall above.

The Heinztman Building in downtown Windsor was also visited by the writer. This old brick building is five storeys high and was reclad with two-inch thick Spectra-Glaze blocks. The facing units were supported at intervals on shelf angles. The whole building is now a cream or light buff colour with white, dirty white and black mortar joints. Again there is evidence of lack of compatibility between the mortar and the facing and some spalling of darkened surface of mortar joints. The appearance of the glazed surfaces on the other hand is good.

While the writer was looking at the building two men approached one of the walls. One took a key from his pocket and raked it along a mortar joint. He was able to scratch the joint easily and he commented to the effect that it shouldn't be in such a condition after only a year of service. The mortar joints appeared to be of a similar composition to those seen previously at the shopping centre.

There has been too little use of Spectra-Glaze units as exterior cladding in buildings in Canada to permit a general conclusion as to their suitability. On the basis of the two examples seen it would appear that exterior exposure may not affect the bond of the facing with the backing. There was no evidence of crazing or cracking of the glazed surfaces. The writer is of the opinion that too little consideration has been given to the selection of pointing mortar for use with Spectra-Glaze units.

General Comments

1. Mr. Ryan said that his firm uses only light-weight concrete units as backing because the glazing bonds best to a porous surface. Very dry blocks are used (autoclave cured), otherwise blisters and spots form in the facing.

2. The manufacturing process is roughly as follows: the resin is mixed with silica sand, catalyst, colour and anti-foaming agent, and is allowed to flow into shallow stainless steel or enamelled pans, one for each unit. The pans move along a conveyor belt where the blocks are placed on the facing. The units then pass, very slowly, through a curing oven and the pans are removed after this.

3. The pot-life of the facing mixture is about 45 minutes depending on temperature. In hot weather cool water is circulated around the jacketed mixer and in cold weather warm water is necessary.