Zeitschrift: IABSE reports of the working commissions = Rapports des commissions de travail AIPC = IVBH Berichte der Arbeitskommissionen

Band: 2 (1968)

Artikel: Thin tile surfaces

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DOI: https://doi.org/10.5169/seals-3982

THIN TILE SURFACES

Carrelages minces

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On page 7 of Dr. Henderson's report there is a reference to the use of P. V. C. tiles on steel bridge decks. This brief contribution gives further information illustrated by one or two examples.

Several movable bridge decks in Britain have recently been surfaced with embossed Verynyl-P. V. C. tiles, 50 cm. square and 3. 2 mm. thick. The minimum thickness of the tiles at the root of the indentations is about 2 mm. and the upper surface is embossed with a 5 mm. grid in diamond pattern to give a maximum thickness of 3. 2 mm. The tiles are stuck on with a normal commercial adhesive known as Bostik C, but it is essential to apply this as thinly as possible.

The first slide,Figure 1, shows these tiles being laid on an old swing-bridge at Liverpool Docks where tracks for road traffic comprised bare steel plates which had worn smooth and were dangerous in wet weather. Some of the tiles were cut and fitted around projecting rivet heads. This illustration shows the adhesive being applied by steel trowel, both to the steel deck, and to the undersides of the tiles.

The next slide, Figure 2, illustrates a roll-on roll-off ferry terminal at Immingham on the north-east coast of England. These bridge ramps are welded steel box girders pivotted at the shore end and adjusted to level by hydraulic ramps at the ferry end. The dead weight of this material is very small, about 1 lb. per square foot of deck (4. 8 kg/M^2).

It is essential to ensure that the steel surface is thoroughly clean and dry when the adhesive is applied and trouble is inevitable if laying is carried out in damp weather or rain. The contract for this terminal was accelerated in order to meet a date for the berthing of a new ship to inaugurate the service and in the rush for early completion some of the surfacing was laid in damp weather. As a result some areas of the tiles subsequently slipped and were replaced.

Repair work on this type of surfacing is quite simple. The defective tiles can be heated, peeled off the deck surface, and new tiles re-laid. It is not essential to remove the old adhesive from the deck plate unless this is in a dirty condition.

The next slide, Figure 3, shows a recent addition to the Dover Cross Channel ferry terminal and the steel decks to the ramps have been surfaced with these tiles. As a result of experience the contractors now seal the joints between the tiles by injecting adhesive with a gun. This has been found necessary in order to avoid the tendency for tiles to lift at the edges.

The fourth slide, Figure 4, shows a bridge ramp at a ferry terminal at Southampton Docks which has been in operation for several years. It is not yet possible to state the life of this type of surfacing, but similar tiles used on pedestrian crossings on heavily trafficked roads have been found to last for seven years. Probably in the case of more lightly trafficked ferry ramps of this kind a ten year life would be expected. The cost of the surfacing is approximately 6/9d. per square foot. Where these tiles are used for surfacing walkways, as illustrated in the slide, the tiles should be kept back about 12 mm. from the face of the kerb to avoid disturbance by pneumatic tyres rubbing the top edge and displacing tiles.

The final slide, Figure 5, illustrates the British Transport Docks Board ferry terminal berths at Southampton where there are three bridge ramps, all of which are surfaced with P. V. C. tiles.

Experience to date has shown that this is a convenient method of surfacing steel deck plates for movable bridges and ferry bridge ramps, but it is perhaps too early to assess the durability and maintenance costs over a long period.

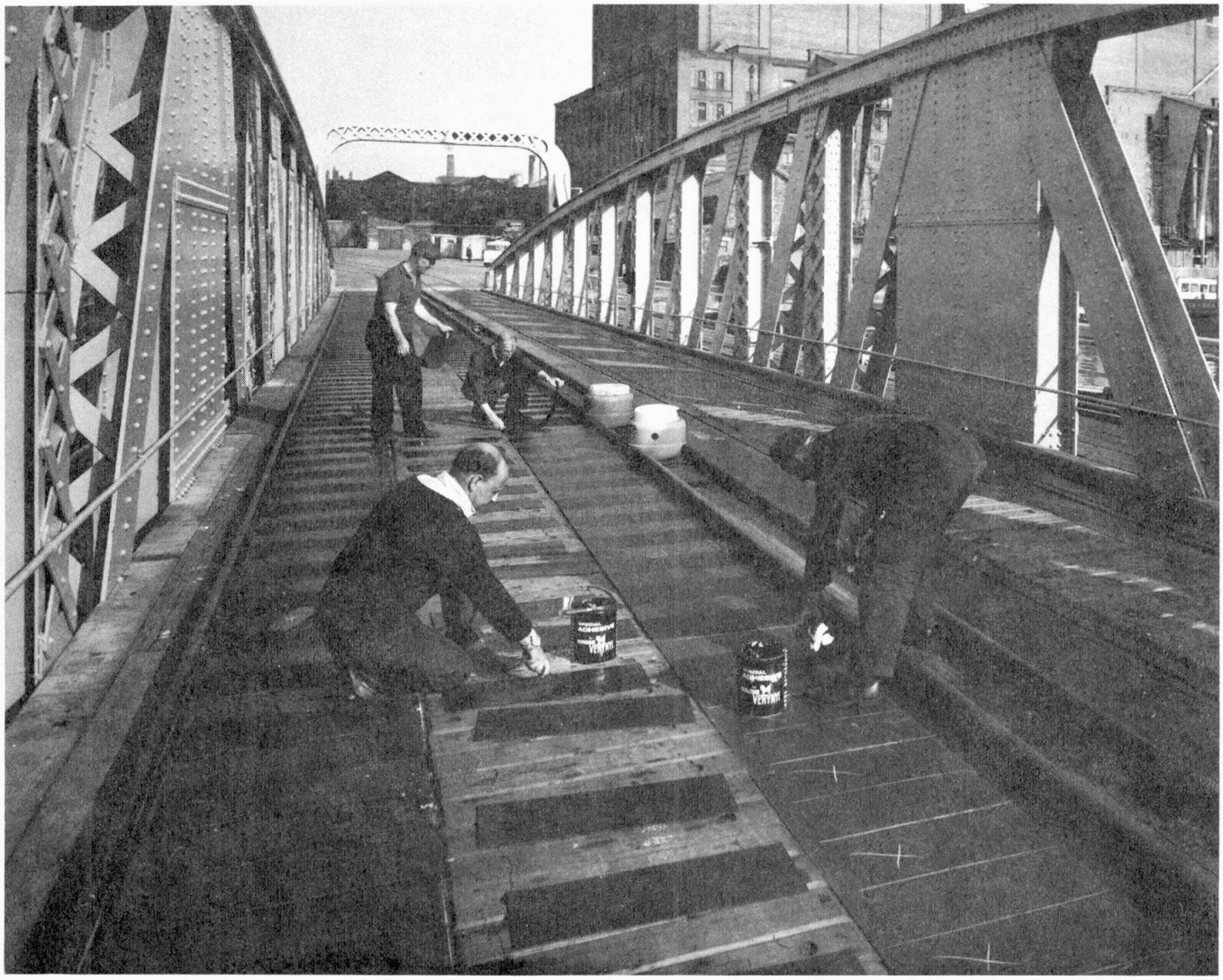

Figure 1

Figure 2

Figure 3

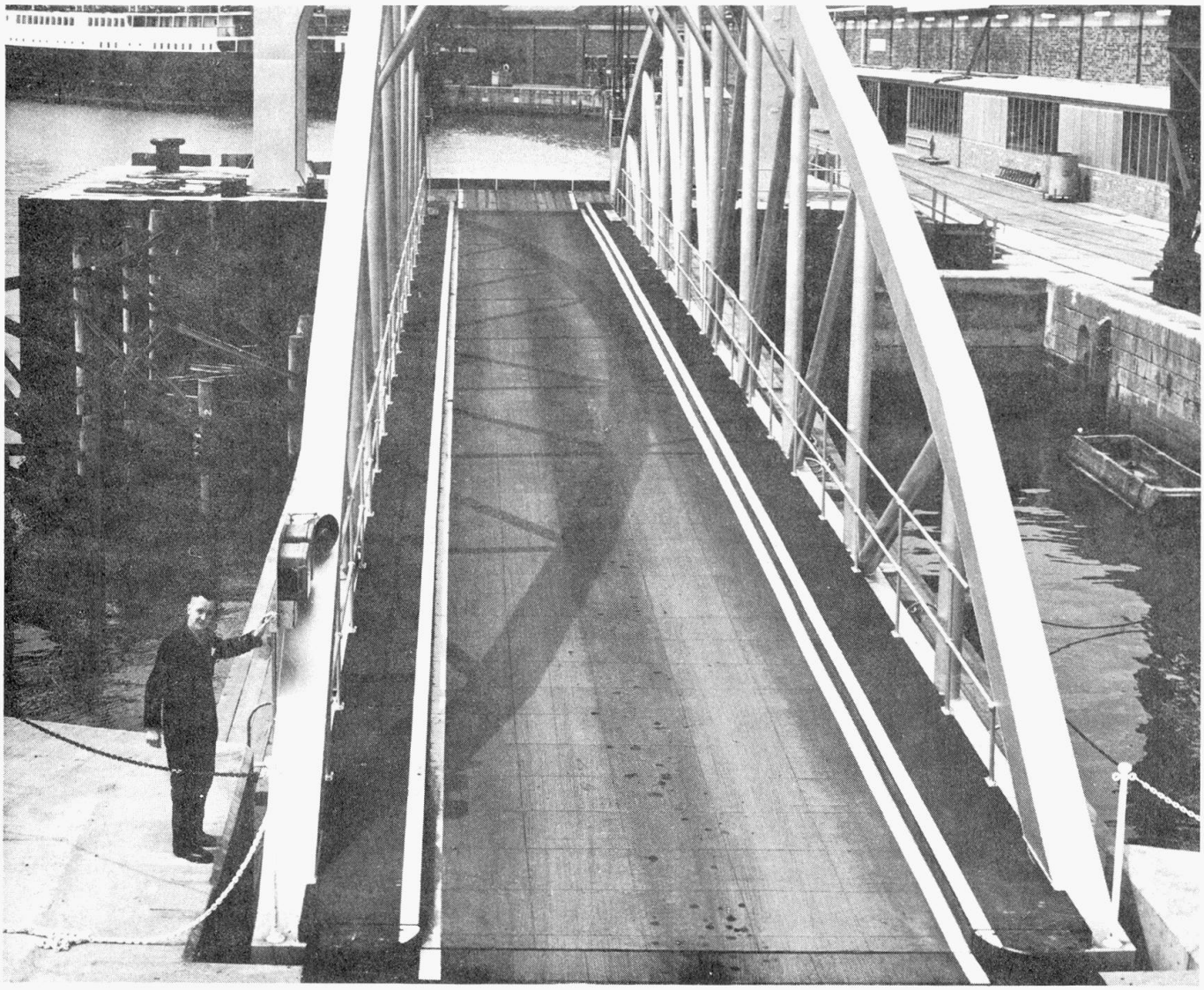

Figure 4

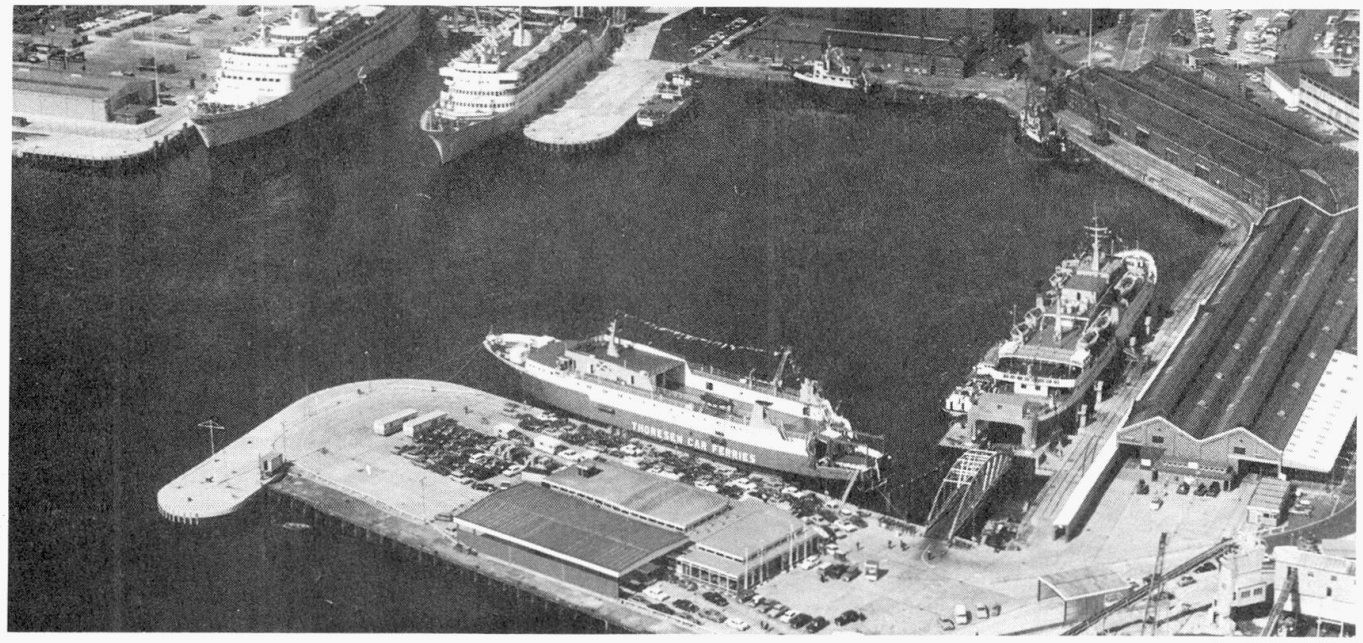

Figure 5

SUMMARY

This contribution describes and illustrates the use of Poly-Vinyl-Chloride tiles secured by adhesive to steel decks as a method of surfacing movable bridges.

RESUME

Cet article décrit et explique l'emploi de dalles en P.V.C., collées sur le tablier, comme revêtement routier très avantageux pour ponts mobiles.

ZUSAMMENFASSUNG

Dieser Beitrag beschreibt und veranschaulicht den Gebrauch von Poly-Vinyl-Chlorid-Fliesen, die durch Haftung auf den Stahlplatten gesichert sind, als Anwendung von Fahrbahnbelägen auf beweglichen Brücken.