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MODEL CLAUSES FOR CIVIL ENGINEERING WORKS

SECTION 110

GENERAL REQUIREMENTS FOR WATERPROOFING UNDERLINE BRIDGES

NOTES TO SPECIFIER:

These notes do not form part of the Specification.

Underline bridges

110.1

NR/L3/CIV/041 is the Specification for the waterproofing of underline bridge decks. It contains:

- (i) test methods, performance criteria, certification and registration requirements for waterproofing systems,*
- (ii) requirements to be considered when selecting a waterproofing system,*
- (iii) the detailing of a waterproofing system,*
- (iv) the requirements for applying a waterproofing system.*

NR/GN/CIV/001 gives further guidance on the waterproofing of underline bridges. There are also manufacturer's Application Guidelines for each registered waterproofing system.

Two types of waterproofing system are available: namely tightly bonded systems and loose-laid systems. Where there is a risk of exposure to fuel oil and lubricating oil, the system must be resistant to such oils.

A waterproofing membrane that is exposed above the track ballast and which is not resistant to ultra-violet light must be protected by a protective layer that is resistant to ultra-violet light.

Dependent on the type, the system could comprise:

- (i) a primer for the substrate (some tightly bonded systems),*
- (ii) an adhesive to bond the membrane to the substrate (some tightly bonded systems),*
- (iii) a waterproofing membrane that is impermeable to water,*
- (iv) a protective layer to prevent damage to the membrane by ballast.*

When an integral protective layer is not specified in the Application Guidelines as part of the waterproofing system, the membrane must be overlaid with a (non-integral) protective layer. Both an integral protective layer and a non-integral protective layer must overlay the waterproofing system when the ballast depth is less than that used in the resistance to indentation by ballast test (see Application Guidelines).

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A non-integral protective layer must be placed beneath a loose-laid membrane when there is a risk that the membrane will be punctured from below.

Application

110.2

The effectiveness of a waterproofing system is dependent upon its design and detailing, the skill and care taken during the preparation of the substrate, the quality of the application and site activities following its application. There must be sufficient time to complete the application of the chosen system in accordance with the manufacturer's Application Guidelines.