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16.1 Scope

16.1.4 Uses requiring Approval

Fibre Reinforced Polymer (FRP) products shall not be used unless consented to by the Ministry.

The following uses require Approval:

- Any fibre or matrix not listed in 16.1.2 or 16.1.3

16.4 Durability

16.4.3 Fibres in FRC

Replace the second sentence with the following:

The use of other fibres shall not be considered by the Ministry.

16.4.6 Allowance for wear in deck slabs

Delete and replace with:

The requirement for an additional thickness of 10mm shall be waived by the Ministry.

16.7 Externally restrained deck slabs

16.7.1 General

Delete Item (c) and replace with:

(c) The total thickness of the deck slab, t , is at least 175 mm and at least $s/15$.

Delete Item (e) and replace with:

(e) The deck slab is confined transversely by straps in accordance with the applicable provisions of Clause 16.7.2, 16.7.3 or 16.7.4.

Commentary: *The Ministry does not allow stay-in-place formwork*

16.7.2 Full-depth cast-in-place deck slabs

Delete Item (a) and replace with the following:

The top flanges of all adjacent supporting beams shall be connected by straps that are perpendicular to the supporting beams and either connected directly to the tops of the flanges, as in the case of the welded steel straps shown in

Figure 16.6, or connected indirectly, as in the case of the partially studded straps shown in Figure 16.7.

Commentary: *The Ministry does not allow stay-in-place formwork and therefore stay in place formwork is not an Approved transverse confining system.*

16.7.3 Cast-in-place deck slabs on stay-in-place formwork

The clause is deleted in its entirety.

Commentary: *The Ministry does not allow stay-in-place formwork.*

16.7.4 Full-depth precast concrete deck slabs

The clause is deleted in its entirety.

16.11 Rehabilitation of existing concrete structures with FRP

16.11.3 Shear rehabilitation with externally bonded FRP systems

16.11.3.2 Factored shear resistance

Replace formula for factored shear resistance provided by the FRP shear reinforcement (V_{FRP}) with the following:

$$V_{FRP} = \frac{\Phi_{FRP} E_{FRP} \epsilon_{FRP} A_{FRP} d_{FRP} (\cot\theta + \cot\alpha) \sin\alpha}{S_{FRP}}$$