

Erratum (September 22, 2017)

NIST GCR 17-917-17, NEHRP Seismic Design Technical Brief No. 13, Seismic Design of Precast Concrete Diaphragms: A Guide for Practicing Engineers, printed August 2017

After Techbrief 13 was printed, an error was discovered on page 18, Section 4.2.3, Determine the Diaphragm Design Acceleration Coefficient.

In Step 1, the spectral response acceleration parameter, S_{DS} , is identified with a typographical error.

In Step 2, C_{pi} , diaphragm design acceleration coefficient at a height equal to 80 percent of h_n above the base, is determined using ASCE/SEI 7-16 Section 12.10.3.2.1. The values for determining C_{pi} are incorrectly identified. The corrected values should read as follows:

C_{pi} is the greater of the two values given by:

$$C_{pi} = 0.8C_{p0}$$

$$C_{pi} = 0.9\Gamma_{m1}\Omega_0C_s$$

Also, for clarification, the following modification is made on page 16, Table 3-1, Applicability of ASCE/SEI 7-16 Section 14.2.4 to Various Types of Precast Connections: Row 2, Column 3 pertaining to Applicability of ASCE/SEI 7-16 Section 14.2.4 to cast-in-place noncomposite topping slab diaphragms now points out that applicability depends on a number of factors and that a decision in this regard is best left to the design professionals. The revised Table 3-1 should thus read as follows. All notes remain unchanged.

Table 3-1. Applicability of ASCE/SEI 7-16 Section 14.2.4 to Various Types of Precast Concrete Diaphragms

Type of Precast Diaphragm	Type of Connector / Joint Reinforcement	Applicability of ASCE/SEI 7-16 Section 14.2.4
Cast-in-place noncomposite topping slab diaphragm	Designed by ACI Section 18.12.5.1 and all other applicable provisions of ACI 318-14 Section 18.12	The applicability of ASCE/SEI 7-16 Sections 12.10.3 and 14.2.4 depends on a number of factors. A definite determination in this regard cannot be made because under certain practical combinations of factors, it may be proper to design these systems as cast-in-place diaphragms. The design professional has to evaluate the particular case to make a determination.
Hollow core with cast-in-place composite topping slab diaphragm	Only connectors are reinforcement in topping slab and reinforcement in joints or reinforcement in cores that are broken open so the bars can be grouted in.	The topping slab reinforcement typically qualifies as high-deformability elements per ASCE/SEI 7-16 Section 14.2.4.3.5. For other reinforcement, see note below.
Double tee with cast-in-place composite topping slab diaphragm	Reinforcement in topping slab. Also, mechanical connections using plate anchorage and welded plates.	The reinforcement typically qualifies as high-deformability elements per ASCE/SEI 7-16 Section 14.2.4.3.5. The connectors need to be qualified per ASCE/SEI 7-16 Section 14.2.4.4.
Hollow core without topping slab diaphragm	Reinforcement in joints or reinforcement in cores that are broken open so the bars can be grouted in.	See note below.
Double tee without topping slab diaphragm	Mechanical connections using plate anchorage and welded plates.	The connectors need to be qualified per ASCE/SEI 7-16 Section 14.2.4.4.