ERRATA

Bond Behavior of Concrete-Filled Steel Tube (CFT) Structures

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After this paper had gone to press, it was determined that four specimens were accidentally included twice in the databases for push-out tests without shear tabs. These duplicate specimens have been removed, and two other specimens that were inadvertently excluded have been added. Additionally, for four of the specimens, the measured tube thickness has been included in place of the nominal tube thickness that was reported in the original paper. Tables 1 and 2 have been revised to reflect these corrections.

These corrections result in minor changes to the empirical bond stress formulas, Equations 3, 4, 7, 8, 13c, and 14c, as well as Figure 4, have been revised to reflect the corrections:

$$F_{in} = 1.15\times10^{6}\left(H/t\right)^{-2.90} \quad R^2 = 0.69 \tag{3}$$

$$F_{in} = 12800\left(t/H^2\right) \quad R^2 = 0.62 \tag{4}$$

$$F_{in} = 27900\left(D/t\right)^{-1.59} \quad R^2 = 0.32 \tag{7}$$

$$F_{in} = 30900\left(t/D^2\right) \quad R^2 = 0.50 \tag{8}$$

$$F_{in} = 12.8\left(t/H^2\right) \le 0.1 \tag{13c}$$

$$F_{in} = 30.9\left(t/D^2\right) \le 0.2 \tag{14c}$$

The corrections to the database also result in minor changes to the proposed resistance and safety factors. Table 9 has been updated to reflect the corrections; values of $\phi = 0.50$ and $\Omega = 3.00$ are recommended for both CCFT and RCFT.

The data and formulas were used elsewhere in the paper; however, the resulting changes are slight and do not affect the conclusions. Specifically:

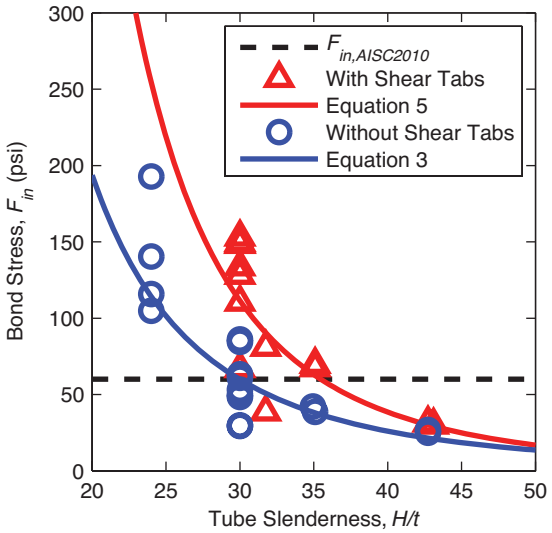
- Equation 8 was used in the computation of the last three columns of Table 6. The original and corrected numbers differ by less than 1%.
- Equations 13c and 14c were used in the mechanistic analysis to determine the minimum transfer lengths presented in Tables 7 and 8. Table 7 has been revised to reflect the corrections. In Table 8, the original and corrected numbers differ by less than 1%. The resulting recommendation for C_{in} has not changed.
- Equation 8 was used to compute the bond stress and the load applied at the connection for the analysis presented in Figure 7. The original and corrected numbers differ by less than 1%. The observations from the analyses have not changed.

Table 1. RCFT Push-Out Tests without Shear Tabs								
Reference	Number of Specimens	L (in.)	H, B (in.)	t (in.)	H/t, B/t	F_y (ksi)	f'_c (ksi)	F_{in} (psi)
Shakir-Khalil, 1993a	10	8–24	3.1–5.9	0.20	16–30	43.0	5.6–5.9	48–193
Shakir-Khalil, 1993b	3	16	5.9	0.20	30	43.0	5.2–5.7	29–61
Parsley et al., 2000	4	48–60	8.0–10.0	0.23	35–43	48.0	5.9–6.5	25–42

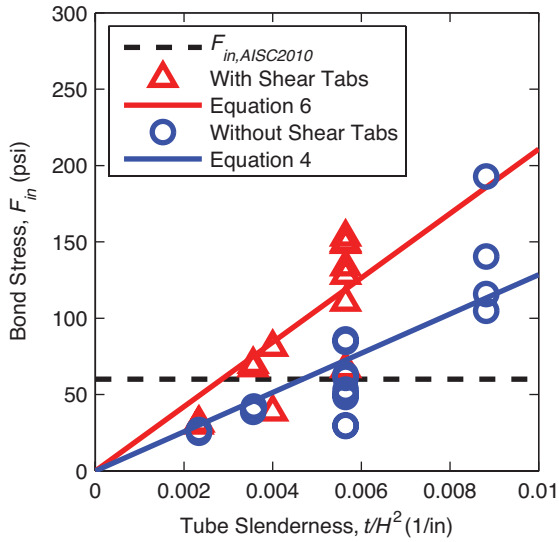
Table 2. CCFT Push-Out Tests without Shear Tabs								
Reference	Number of Specimens	L (in.)	D (in.)	t (in.)	D/t	F_y (ksi)	f'_c (ksi)	F_{in} (psi)
Virdi and Dowling, 1975	82	6–18	5.8–12.0	0.22–0.40	15–32	mild steel	3.2–6.7	75–431
Shakir-Khalil, 1993a	6	8–24	6.6	0.20	34	43.0	6.1	95–135
Shakir-Khalil, 1993b	3	16	6.6	0.20	34	43.0	5.6–5.7	63–135
Roeder et al., 1999	18	30–76	10.8–24.0	0.22–0.53	20–109	not given	4.0–6.9	1.5–114
Xu et al., 2009	3	20	6.1–6.3	0.11–0.18	35–57	not given	6.8	87–97
Aly et al., 2010	14	16	4.5	0.13	36	50.8	5.9–13.2	51–181

Table 7. RCFT Minimum Transfer Lengths from Mechanistic Analysis									
	Case	H (in.)	B (in.)	t (in.)	H/t	F_y (ksi)	f'_c (ksi)	$L_{transfer}$ (in.)	$L_{transfer}/H$
Square CFT	Load on steel, column extends both sides	4.00	4.00	0.067	59.5	36.0	3.0	45.78	11.45
	Load on steel, column extends below only	4.00	4.00	0.125	32.0	36.0	3.0	15.80	3.95
	Load on concrete	4.00	4.00	0.125	32.0	36.0	3.0	15.80	3.95
RCFT	Load on steel, column extends both sides	4.00	4.00	0.067	59.5	36.0	3.0	45.78	11.45
	Load on steel, column extends below only	8.00	4.00	0.667	12.0	36.0	3.0	23.12	2.79
	Load on concrete	8.00	4.00	0.667	12.0	36.0	3.0	23.12	2.79

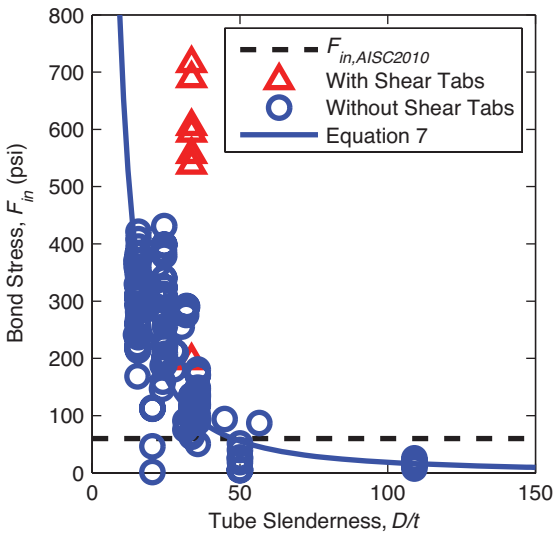
Table 9. Computation of Resistance and Safety Factors					
Type	Number of Experiments	R_m/R_n	V_R	ϕ	Ω
RCFT	17	0.94	0.39	0.50	3.02
CCFT	126	1.27	0.50	0.56	2.70



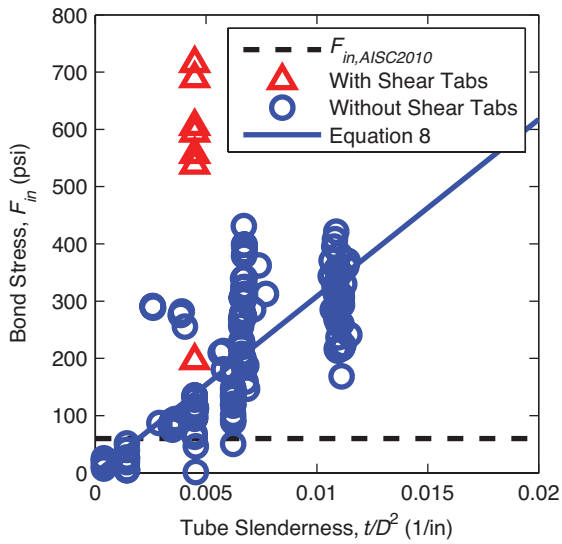
(a) Bond stress of RCFT as a function of H/t



(b) Bond stress of RCFT as a function of t/H^2



(c) Bond stress of CCFT as a function of D/t



(d) Bond stress of CCFT as a function of t/D^2

Fig. 4. Bond stress for CFT as a function of tube slenderness.