

## ERRATA

### PTI DC45.1-18

#### Recommendations for Stay Cable Design, Testing, and Installation

Seventh Edition, First Printing 2018

DC-45 Stay Cable Bridge Committee

The following errata item was added on December 2, 2019:

#### Page 48, Eq. C5.2.3-1:

##### C5.2.3.2 — Rain-wind-induced vibrations

The following tentative stability criterion for rain-wind-induced vibrations of smooth circular cables has been proposed<sup>17</sup>

$$Sc = \frac{m\xi}{\rho D^2} \geq 10 \quad (\text{C5.2.3-1})$$

(Scruton number,  $Sc$  is greater or equal to 10)

where

$m$  is the cable mass per unit length

$\xi$  is the ratio of structural damping to critical damping

$\rho$  is the air density

$D$  is the cable diameter

The expression  $(m\xi/\rho D^2)$  is called the mass-damping parameter or Scruton number  $Sc$ . Note that modification to cable shape may allow this criterion to be relaxed if proven by wind tunnel tests. A value of 5 has been proposed in lieu of the lower limit of 10 in Eq. (C5.2.3-1) for special helix or dimpled stay pipes with special testing to verify this value. Eq. (C5.2.3-1) implies that for typical cable mass densities and diameters, a damping ratio of  $\xi$  equal to 0.5% to 1.0% (depending on the actual values of  $m$  and  $D$ ) would be sufficient to suppress rain-wind-induced vibrations.