ERRATUM "Design, Safety and Operation of Dams" – § 15.4.3

Convention page number: [version 2011 / version 2020 / version 2022] if the page number is in parenthesis, the issue was corrected in the new version. Changes are indicated in red.

348/368/366: ...

ENG: With p(y) the shear force Q(y) becomes:

FR : Avec p(y), l'effort tranchant Q(y) devient :

$$Q(y) = \int p(y) \cdot dy$$

...

352/(372)/(370-371):

Add « + » in all parentheses $\left(a_{ii} + \frac{\beta_i \cdot R_i^2}{d_i}\right)$

360/380/378: Table 15.45: In the last column it should be $E_B \cdot \delta_A$

365/385/383: Table 15.55(a) The column e_R is incorrect, correct values are:

e_R [m]	$\sigma_{PP,am}$ [N/mm²]	$\sigma_{PP,av}$ [N/mm²]
0	0.00	0.00
1.86	0.08	0.73
2.60	0.06	1.47
2.64	0.23	1.96
1.38	0.89	1.90
-1.71	2.45	1.02
-5.85	4.76	-0.62
-10.70	7.66	-2.89

The subsequent values must also be corrected.

The eccentricity e_R is defined in the following way in the Excel file:

The center of gravity of a trapeze is on the median between the upper and lower face at a height of $\frac{h}{3} \cdot \frac{a+2b}{a+b}$ from the lower face.

This gives us the Thales theorem:

$$\frac{h}{D} = \frac{\frac{h}{3} \cdot \frac{a+2b}{a+b}}{e_R}$$

with D the horizontal distance between the centers of the two faces. Thus:

$$e_R = \frac{h}{3} \cdot \frac{a+2b}{a+b} \cdot \frac{D}{h} = \frac{D}{3} \cdot \frac{a+2b}{a+b}$$

$D = e_b - e_a$ if the eccentricity is defined with respect to the center of each slice (used in the book, but with e defined with the upstream face)

$D = (e_b + b/2) - (e_a + a/2)$ if the eccentricity is defined with respect to the upstream face (which should be used instead in the book)