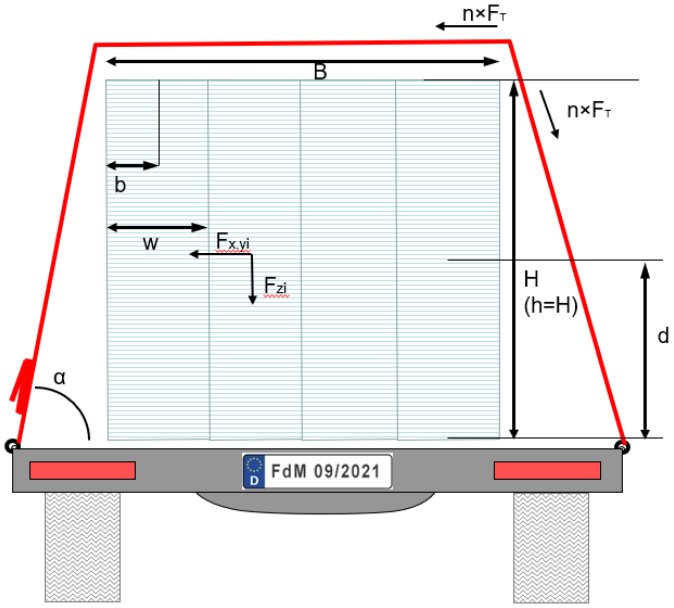
Photo of the month, September 2021: Calculation example

To assess the way in which this load was secured, we carried out a calculation using the simplified Formula 17 as laid down in DIN EN 12 195-1. To do this, we only included the tie-down lashings in the calculation, not the loop lashings.

Assumptions: H = 1.35 m, B = 1.35 m, fs = 1.1, cy = 0.5, cz = 1.0

Formula 17 from DIN EN 12195 – 1 January 2021

$$m \leq \frac{2 \times n \times F_T \times (\sin\alpha + 0.25 \times (N-1))}{f_s \times g \times (c_y \times \frac{H}{B} \times N - c_z)}$$



$$m \leq \frac{2 \times 7 \times 350\ daN \times (0.98 + 0.25 \times (4-1))s^2}{1.1 \times 9.81m \times (0.5 \times \frac{1.35m}{1.35m} \times 4 - 1)}$$

$$m \leq \frac{14 \times 350\ daN \times (0.98 + 0.75)s^2}{10.791m \times (1)}$$

$$m \leq \frac{8477\ s^2 daN}{10.791m}, \qquad daN = \frac{10\ kg\ m}{s^2}$$

$$m \leq \frac{785.562\ s^2 \times 10\ kg\ m}{m\ s^2}$$

$$m \leq 7{,}855.62\ kg$$