

Technical (od/ DVS 22 5 2 Supplements

D ce ber 2016

## Technical Code DVS 2205-2 Supplement 5

Calculation of tanks and apparatus made of thermoplastics – Vertical round nonpressurised tanks – Tanks with supporting frames in earthquake zones

Technical Comittee of the DW

Working Group W 4 "Joining Plast ss"

Subgroup W 4 3b "Structural Design - Apparatus Engineering"

This problection has been drawn up by a group of experienced specialists working in an honorary capacity and its consideration is recommended. The user should always check to what extent the contents are applicable to his particular case and whether the version on hand is still valid. No liability can be accepted by the DVS – Deutscher Verband für Schweißen und wandte Verfahren e.V., and those participating in the drawing up of the document.

## **Content:**

1.	Scope	3
2.	Structure	
3.	Calculation variables	3
J.	Calculation variables	
4.	Tank acceleration	
4.1	Tank acceleration  Horizontal tank acceleration	9
4.2.	Oscillation period for horizontal oscillation	9
4.3.	Oscillation period for horizontal oscillationVertical tank acceleration	11
4.4.	Oscillation period for vertical oscillation	11
5.	Loads	11
5.1.	From horizontal tank acceleration	12
5.2.	Loads  From horizontal tank acceleration  From vertical tank acceleration	12
6.	Analyses	12
7.	Verification	13
8.	Dimensioning of the tank with supporting fram	13
8.1.	Axial stability of the cylinder	13
8.2.	Axial stability of the frame	14
8.3.	Axial stability next to the connecting piece in the inder	
8.4.	Axial stability next to the connecting piece in the fram	16
8.5.	Axial stability of the supporting rings	17
8.6.	Buckling stability of the stiffeners	18
8.7.	Anchoring	20
9.	References	21