

DIN EN 13445-3/A2:2014-03 (E)

Unfired pressure vessels - Part 3: Design (includes Amendment A2:2013)

Contents		Page
Foreword		3
1	Modification to 16.12	4
16.12	Vertical vessels with skirts	4
16.12.1	Purpose	4
16.12.2	Specific symbols and abbreviations (see Figure 16.12-1, Figure 16.12-2, Figure 16.12-3 and Figure 16.12-4)	4
16.12.3	Connection skirt / shell	5
16.12.4	Design of skirts without and with openings	17
16.12.5	Design of anchor bolts and base ring for skirts	20
2	Modification to Clause 22	35
22	Static analysis of tall vertical vessels on skirts	35
22.1	Purpose	35
22.2	Specific definitions	36
22.2.1	Tall vertical vessels	36
22.2.2	Dead loads	36
22.2.3	Live loads	36
22.2.4	Wind loads on columns	36
22.2.5	Earthquake loads on columns	36
22.2.6	Forces from attached external piping on columns	36
22.3	Specific symbols and abbreviations	37
22.4	Loads	37
22.4.1	Pressures	37
22.4.2	Dead loads	37
22.4.3	Live loads	38
22.4.4	Wind loads	38
22.4.5	Earthquake loads	40
22.4.6	Additional loads from attached external piping at nozzles and supports	40
22.5	Load combinations	41
Table 22-1	- Load combinations for columns	42
22.6	Stress analysis of pressure vessel shells and skirts	43
22.6.1	Cylindrical pressure vessel shells	43
22.6.2	Conical sections of the pressure vessel	43
22.6.3	Skirt shell	43
22.7	Design of joint between skirt and pressure vessel (at dished end or cylindrical shell)	43
22.8	Design of anchor bolts and base ring assembly	43
22.9	Foundation loads	44
Table 22-2	- Data for foundation design	44