

DIN EN ISO 13705:2013-04 (E)

Petroleum, petrochemical and natural gas industries - Fired heaters for general refinery service (ISO 13705:2012); English version EN ISO 13705:2012, only on CD-ROM

Inhalt	Seite
Foreword	4
Introduction.....	5
1 Scope	6
2 Normative references	6
3 Terms, definitions, abbreviated terms and symbols	8
3.1 Terms and definitions	9
3.2 Abbreviated terms and symbols.....	16
4 General	17
4.1 Pressure design code	17
4.2 Regulations	17
4.3 Heater nomenclature.....	17
5 Proposals	21
5.1 Purchaser's responsibilities.....	21
5.2 Vendor's responsibilities.....	21
5.3 Documentation	21
5.4 Final reports	23
6 Design considerations	23
6.1 Process design	23
6.2 Combustion design	24
6.3 Mechanical design.....	24
7 Tubes	25
7.1 General	25
7.2 Extended surface.....	26
7.3 Materials	27
8 Headers	27
8.1 General	27
8.2 Plug headers	28
8.3 Return bends	29
8.4 Materials	29
9 Piping, terminals and manifolds	30
9.1 General	30
9.2 Allowable movement and loads	31
9.3 Materials	33
10 Tube supports	33
10.1 General	33
10.2 Loads and allowable stress.....	34
10.3 Materials	35
11 Refractories and insulation	36
11.1 General	36
11.2 Brick and tile construction	37
11.3 Castable construction.....	38
11.4 Ceramic-fibre construction	38
11.5 Multi-component lining construction	40

11.6	Materials	40
12	Structures and appurtenances.....	41
12.1	General.....	41
12.2	Structures	41
12.3	Header boxes, doors and ports.....	42
12.4	Ladders, platforms and stairways.....	42
12.5	Materials	43
13	Stacks, ducts and breeching	44
13.1	General.....	44
13.2	Design considerations	44
13.3	Design methods	46
13.4	Static design.....	46
13.5	Wind-induced vibration design	47
13.6	Materials	48
14	Burners and auxiliary equipment.....	48
14.1	Burners	48
14.2	Sootblowers	53
14.3	Fans and drivers	53
14.4	Dampers and damper controls for stacks and ducts.....	53
15	Instrument and auxiliary connections	54
15.1	Flue gas and air.....	54
15.2	Process fluid temperature	55
15.3	Auxiliary connections	55
15.4	Tube-skin thermocouples	56
15.5	Access to connections.....	56
16	Shop fabrication and field erection.....	56
16.1	General.....	56
16.2	Structural-steel fabrication	57
16.3	Coil fabrication.....	58
16.4	Painting and galvanizing.....	59
16.5	Refractories and insulation	59
16.6	Preparation for shipment	60
16.7	Field erection.....	61
17	Inspection, examination and testing.....	61
17.1	General.....	61
17.2	Weld examination	62
17.3	Castings examination.....	62
17.4	Examination of other components.....	63
17.5	Testing	64
	Annex A (informative) Equipment data sheets.....	66
	Annex B (informative) Purchaser's checklist	95
	Annex C (informative) Proposed shop-assembly conditions	99
	Annex D (normative) Stress curves for use in the design of tube-support elements	101
	Annex E (normative) Centrifugal fans for fired-heater systems	116
	Annex F (normative) Air preheat systems for fired process heaters	133
	Annex G (informative) Measurement of efficiency of fired process heaters.....	191
	Annex H (informative) Stack design	259
	Annex I (informative) Measurement of noise from fired-process heaters	269
	Bibliography	305