

DIN EN ISO 13705:2007-02 (E)

Petroleum, petrochemical and natural gas industries - Fired heaters for general refinery service (ISO 13705:2006); English version EN ISO 13705:2006

Inhalt	Seite
Foreword	4
Endorsement notice	4
Introduction.....	5
1 Scope.....	5
2 Normative references.....	5
3 Terms and definitions	8
4 General	15
4.1 Pressure design code	15
4.2 Regulations	15
4.3 Heater nomenclature.....	15
5 Proposals	19
5.1 Purchaser's responsibilities	19
5.2 Vendor's responsibilities.....	19
5.3 Documentation	19
5.4 Final records	21
6 Design considerations	21
6.1 Process design	21
6.2 Combustion design	22
6.3 Mechanical design.....	22
7 Tubes	23
7.1 General	23
7.2 Extended surface.....	24
7.3 Materials	24
8 Headers	25
8.1 General	25
8.2 Plug headers	26
8.3 Return bends	27
8.4 Materials	27
9 Piping, terminals and manifolds	28
9.1 General	28
9.2 Allowable movement and loads.....	29
9.3 Materials	31
10 Tube supports.....	31
10.1 General	31
10.2 Loads and allowable stress.....	32
10.3 Materials	33
11 Refractories and insulation	34
11.1 General	34
11.2 Brick and tile construction	35
11.3 Castable construction.....	36
11.4 Ceramic-fibre construction	36
11.5 Multi-component lining construction	38
11.6 Materials	38
12 Structures and appurtenances	39

12.1	General.....	39
12.2	Structures	39
12.3	Header boxes, doors and ports.....	40
12.4	Ladders, platforms and stairways.....	40
12.5	Materials	41
13	Stacks, ducts and breeching	42
13.1	General.....	42
13.2	Design considerations	42
13.3	Design methods	43
13.4	Static design.....	44
13.5	Wind-induced vibration design	45
13.6	Materials	46
14	Burners and auxiliary equipment.....	46
14.1	Burners	46
14.2	Sootblowers	51
14.3	Fans and drivers	51
14.4	Dampers and damper controls for stacks and ducts.....	51
15	Instrument and auxiliary connections	52
15.1	Flue gas and air.....	52
15.2	Process fluid temperature	53
15.3	Auxiliary connections	53
15.4	Tube-skin thermocouples	54
15.5	Access to connections.....	54
16	Shop fabrication and field erection.....	54
16.1	General.....	54
16.2	Structural-steel fabrication	55
16.3	Coil fabrication.....	56
16.4	Painting and galvanizing.....	57
16.5	Refractories and insulation	57
16.6	Preparation for shipment	58
16.7	Field erection.....	59
17	Inspection, examination and testing.....	59
17.1	General.....	59
17.2	Weld examination	59
17.3	Castings examination.....	60
17.4	Examination of other components.....	61
17.5	Testing	61
Annex A (informative) Equipment data sheets.....		63
Annex B (informative) Purchaser's checklist		92
Annex C (informative) Proposed shop-assembly conditions		96
Annex D (normative) Stress curves for use in the design of tube-support elements		98
Annex E (normative) Centrifugal fans for fired-heater systems		114
Annex F (normative) Air preheat systems for fired-process heaters		131
Annex G (informative) Measurement of efficiency of fired-process heaters		189
Annex H (informative) Stack design		257
Bibliography.....		267