

Anex no. 1 - Technical specification

Modification of test section for a liquid metal loop

1. Description of the equipment:

A modification of a test section of a liquid metal (PbLi) loop is requested. The modified test section must contain 3 straight pipe sections for flowmeters testing, sections of reference flowmeters and an accumulation vessel. The supplier will deliver design and strength calculations, technical documentation and fabricate the test section.

No.	Technical and operational characteristics	Required value
► Technical specification of the modified test section for a liquid metal loop		
► Requested parts of the test section (see 3D model in appendix 4)		amount (pc)
1	MEL25-CV-200010s	1
2	MEL25-CV-200011s	1
3	MEL25-CV-200012s	1
4	MEL25-CV-200013s	1
5	MEL25-CV-200015s	1
6	MEL25-CV-200320s	1
7	MEL25-CV-200333s	1
8	MEL25-CV-200343s	1
9	MEL25-CV-200348s	1
10	MEL25-CV-200354s	1
11	MEL25-CV-200355s	1
12	MEL25-CV-200356s	1
13	MEL25-CV-200357s	1
14	MEL25-CV-200358s	1
15	MEL25-CV-200366s	1
16	MEL25-CV-200367s	1
17	MEL25-CV-800055p	1
18	MEL25-CV-800095p	1
19	MEL25-CV-900008w	1
20	MEL25-CV-900009w	1
21	MEL25-CV-900012a	1
22	MEL25-CV-900017w	1
23	MEL25-CV-900018w	1
24	MEL25-CV-900043w	4
25	MEL25-CV-900044w	1
26	MEL25-CV-900045w	1
27	MEL25-CV-900073a	1
28	measurement channel for flowmeter EMD tr, Din=14 mm, Mat. 1.4571	1
29	measurement channel for flowmeter EMD tr, Din=21 mm, Mat. 1.4571	1
30	measurement channel for flowmeter EMD tr, Din=26 mm, Mat. 1.4571	1
► Common requirements		
31	Technical documentation of the test section (Basic design)	yes
32	Calculation of strength and thermal deformations of the loop	yes
33	Keeping main dimensions of the test section according to anex 2 (pipe lengths, pipe diameters, wall thickness, vessel volumes, connecting flanges)	yes
34	Quality control system according to ISO 9001	yes
35	Requirements for carrying out welding procedures according to ISO 3834-2	yes
36	Full assembly of the items no. 1 - 30 on delivery site	yes
37	Helium leakage rate of the whole assembly (all connections are well sealed)	max. $1 \times 10^{-6} \text{Pa/m}^3 \text{s}$
Details of the working fluid		
38	Name of the working fluid	eutectic alloy of Pb - Li
39	Composition [at.%]	16 % Li, 84 % Pb
40	Max. pressure of the working fluid (absolute)	250 kPa
41	Minimum temperature	20 °C
42	Range of operating temperatures	250 - 450 °C
43	Maximum temperature of the fluid	450 °C
Manufacturing materials (material designation according to EN 10027-2):		
44	preferred material	1,4301
45	allowed alternatives (in order of preference)	1.4571, 1.4034, 1.4404, 1.4541
46	Material atests	min. 3.1