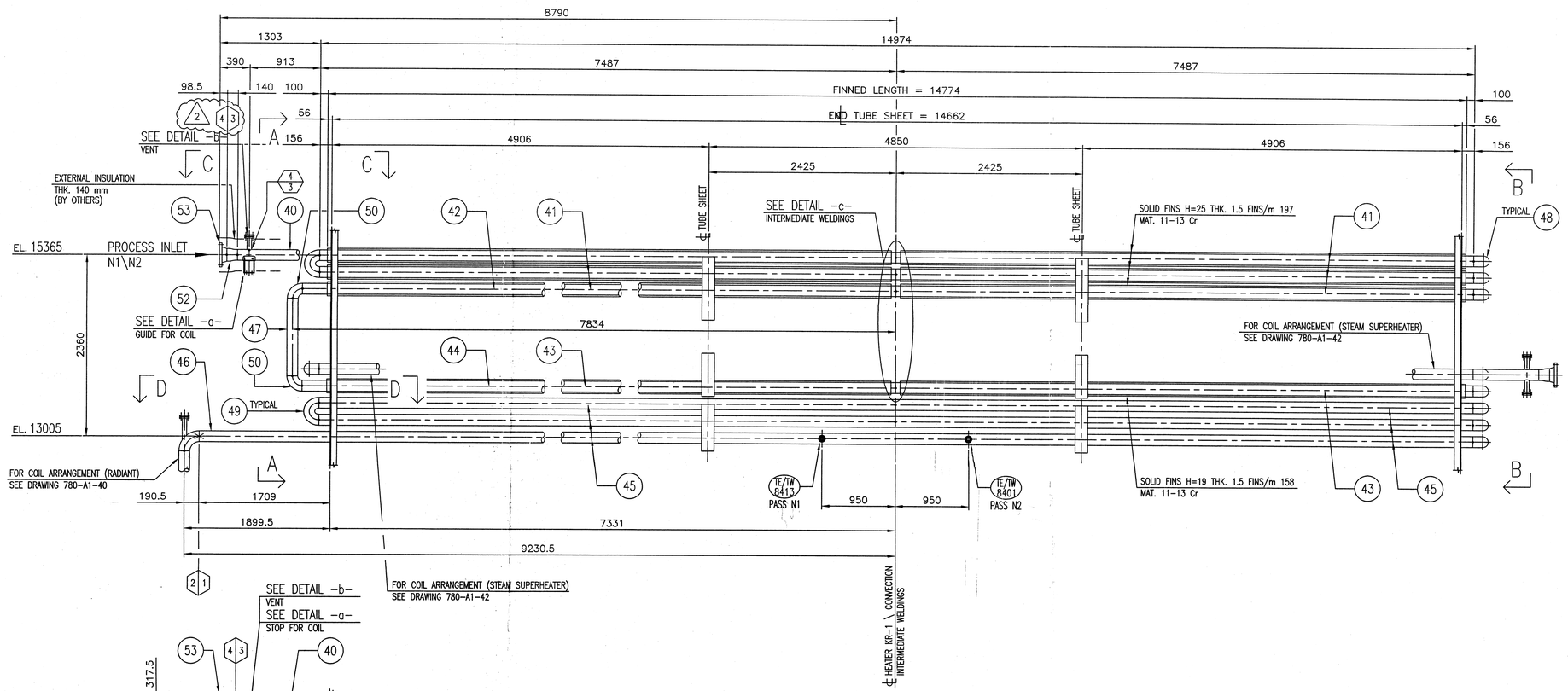

MATERIAL LIST

ITEM	Q.TY REQ'D.	DESCRIPTION	LENGTH (mm)	MATERIAL CERTIFICATE	MATERIAL	NOTES
40	2	TUBE O.D. 141.3 THK. 6.55 A.W.	8551.5	YES	A 335 P91	FINNED TUBES
41	20	TUBE O.D. 141.3 THK. 6.55 A.W.	7487	YES	A 335 P91	FINNED TUBES
42	2	TUBE O.D. 141.3 THK. 6.55 A.W.	7707	YES	A 335 P91	FINNED TUBES
43	6	TUBE O.D. 141.3 THK. 6.55 A.W.	7487	YES	A 335 P91	FINNED TUBES
44	2	TUBE O.D. 141.3 THK. 6.55 A.W.	7707	YES	A 335 P91	FINNED TUBES
45	22	TUBE O.D. 141.3 THK. 6.55 A.W.	7487	YES	A 335 P91	
46	2	TUBE O.D. 141.3 THK. 6.55 A.W.	9040	YES	A 335 P91	+100 FOR ADJUS.
47	2	TUBE O.D. 141.3 THK. 6.55 A.W.	1006	YES	A 335 P91	DESIGN CASE 3
48	12	RETURN BEND N.D. 5" SCH. 40 (THK. 6.55 A.W.) S.R. 180°		YES	A 234 WP91	DESIGN CASE 1
49	12	RETURN BEND N.D. 5" SCH. 40 (THK. 6.55 A.W.) S.R. 180°		YES	A 234 WP91	
50	4	ELBOW N.D. 5" SCH. 40 (THK. 6.55 A.W.) S.R. 90°		YES	A 234 WP91	
51						
52	2	CONCENTRING REDUCER N.D. 6"x5" SCH. 40		YES	A 182 WP91	
53	2	FLANGE N.D. 6" 300 lb W.N. R.F. SCH. 40		YES	A 182 F91	SEE NOTE D
54						
55	2	FLANGE N.D. 1 1/2" 300 lb L.W.N. R.F.		YES	A 182 F91	SEE NOTE D
56	2	BLIND FLANGE N.D. 1 1/2" 300 lb R.F.		YES	A 182 F91	SEE NOTE D
57	2	GASKET FOR FLANGE N.D. 1 1/2" 300 lb		YES	AISI 316+GRAPH.	CAMPROFILE
58	8	STUD BOLTS M20 LENGTH 100		YES	A 193 Gr. B16	
59	16	NUT M20		YES	A 194 Gr. 4	
60	16	WASHER FOR M20		YES	11701.2-GALV.	
61	2	PAD 173x6.55 LENGTH 160		YES	A 335 P91	DERIVED FROM TUBE
62	8	PLATE 190x71 THK. 8			AISI 310	
63	2	PLATE 140x165 THK. 8			AISI 310	
64	2	PLATE 140x150 THK. 8			AISI 310	
65						
66	96	PLATE 100x25 THK. 8			AISI 310	
67	32	PLATE 100x19 THK. 8			AISI 310	

GENERAL NOTES

A) ALL WELDS PREPARATION WILL BE IN ACCORDANCE WITH ANSI B 16.25

B) ALL DIMENSIONS ARE IN mm UNLESS OTHERWISE INDICATED

C) DURING CONSTRUCTION VERIFY THE TUBES EXACT LENGTH SO THAT ALL THE COIL IS PERFECTLY ALIGNED

D) THE FLANGES WILL BE MACHINED WITH GASKET SURFACE 125 -: 250 AARH. FLANGE DIMENSIONS ACCORDING TO ANSI B 16.25

E) SHOWS FIELD WELDING
SHOWS WORKSHOP WELDING

F) (4) SHOWS DESIGN CASE

G) SKIN POINT MATERIAL AISI 310

H) FLANGES + COIL (EXTERNAL INSULATED PORTION) SHALL BE PAINTED ACCORDING TO SPEC. 9856-4132-000-4-101 REV.A-CYCLE I B

I) MATERIAL FOR COIL SHALL WITHSTAND IMPACT TEST WITH 27J AT -28° (2)

FOR COIL ARRANGEMENT (RADIANT) SEE DRAWING 780-A1-40
FOR COIL ARRANGEMENT (STEAM SUPERHEATER) SEE DRAWING 780-A1-42
FOR COIL ARRANGEMENT (SPOOLS FOR PIGGING) SEE DRAWING 780-A1-43

(2) FOR DETAILS SEE SHEET 2 OF 2

DESIGN AND OPERATING DATA (RADIANT + CONVECTION)

DESCRIPTION		PROCESS				
TYPE OF FLUID		VISBREAKER RESIDUE				
DESIGN PRESSURE (2)	kPa(g)	1200/FV				
OPERATING PRESSURE	kPa(g)	700				
HYDROSTATIC TEST PRESSURE	kPa(g)	7760				
OPERATING FLUID TEMPERATURE (INLET)	°C	270				
OPERATING FLUID TEMPERATURE (OUTLET)	°C	393				
DESIGN FLUID TEMPERATURE	°C	425				
DESIGN CASE		1	2	3	4	
DESIGN TUBE WALL TEMPERATURE (MAX)	°C	630	425	450	350	
DESIGN TUBE WALL TEMPERATURE (MIN)	°C	-28				
PED CATEGORY		IV, MOD. G				
CORROSION ALLOWANCE	mm	4				
PED FLUID GROUP		1				
TOTAL CAPACITY	litre	22492				
TOTAL FLOW RATE	kg/h	221.875				
TOTAL EXPOSED SURFACE	m²	555				
TOTAL DUTY	MW	20.3				
DESIGN CODE		API 530				
ITEM		KR-1				
SERIAL No.		12-310				

WELDING SPECIFICATIONS

CODE	EN 15614-1
TUBE MATERIAL	A 335 P91
FITTINGS MATERIAL	A 234 WP91
FLANGES MATERIAL	A 182 F91
JOINT EFFICIENCY	1
WELD INSPECTION REQUIREMENTS	YES
WELDING PROCEDURE	YES
WELDING SPECIFICATION	YES
PROCEDURE QUALIFICATION	YES
WELDER QUALIFICATION	YES
X-RAY (SHOP)	100%
X-RAY (FIELD)	100%
STRESS RELIEVING	YES
HARDNESS TEST	YES
SHOP WELDS (DN/N')	5"/N'90-6"/N'154-8"/N'8
FIELD WELDS (DN/N')	5"/N'4 - 6"/N'10

2	2013.07.19	STATYBAI - PATAISYTA (2)			Z. STANIULIS	
LAIDA	DATA	KEITIMO PAVADINIMAS (PRIEŽASTIS)			BRAIŽ?	TIKRINO

ATESTATO Nr.	PROJEKTAS
0999	Visbrekingo likučio vakuuminės rektifikacijos blokas, adresu Mažeikių r. sav. Juodeikių k.

UAB "PROVIVO LT" SAVANORIŲ PR.192-312 LT-44151, KAUNAS tel: 8 (37) 422838 faks: 8 (37) 422406

PAREIGOS	V.PAVARD?	PARAŠAS	DATA
PV	Z. STANIULIS		2013.07.19

STATINIO PAVADINIMAS: KROSNIS KR-1

BRĖŽINIO PAVADINIMAS: Gyvatuko išdėstymas (konvekcinės dalies) / Coil arrangement (convection) — LAIDA: 2

ETAPAS	SAKYTOJAS	BRĖŽINIO INDEKSAS	LAPAS	LAP?
DP	AB "ORLEN LIETUVA"	73267-DP-2661001	1	2

OFISAS	SKYRIUS	MASTELIS	FORMATAS	UŽSAKYMO Nr.	OBJEKTO Nr.	BRĖŽINIO NUMERIS
KAUNAS	26	1:33.33	A1	73267/02	-	2661001

ISSUED FOR CONSTRUCTION-REVISED WHERE INDICATED (2)	A.E.	DXG/ADL	GM	19/07/13	2
ISSUED FOR CONSTRUCTION-REVISED WHERE INDICATED	A.E.	DXG/ADL	GM	03/05/13	1
ISSUED FOR APPROVAL	A.E.	DXG/ADL	GM	15/01/13	0
DESCRIPTION:	MADE BY:	CHECKED BY:	APPROVE BY:	DATE	REV

vergaengineering S.p.A. MILAN ITALY

DWG. VERGA N° 780-A1-041 Sheet no.

CLIENT:	UNIT:	Page Number:
AB ORLEN Lietuva MAŽEIKIAI, LITHUANIA	BITUMEN VACUUM UNIT	1/2
		NO. A4
PROJECT NAME: VISBREAKER VACUUM FLASHER UNIT	TITLE: COIL ARRANGEMENT (CONVECTION)	COPY No.
PROJECT GRADE: DETAIL DESIGN	SCALE: 1:33.33 / DWG. No. - / REV. 2	

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