Welding Procedure Qualification Certificate (EN ISO 15614-1)

Energy - Downstream, Power and Manufacturing

Manufacturer's Welding Procedure Qualification Record No.:	**LAB 2956 KVS**	Examining body Reference No:	**Notified Body / 0038**
Manufacturer:	**Van der Kolk & Vos Staalbouw BV**		
Address:	**Bagijnhof 30, Veen**		
Welders Name	**M.W. Vos (MV)**		
Code/Testing Standard:	**EN-ISO 15614-1; 2004 (A2; 2012) / Pressure Equipment Directive 97/23/EG**		
Date of Welding:	**27-01-2014**		

Range of Qualification

Welding Process(es):	**135 (acc. ISO 4063)**
Type of joint and weld:	**BW, FW**
Parent material group(s) and sub-group(s):	**1[a]- 1 (Material test plate S355J2+N acc. EN 10025-2)**
Parent Material Thickness (mm):	**7,5 – 30,0 mm**
Weld Metal Thickness (mm):	**7,5 – 30,0 mm**
Throat Thickness (mm)	**No restriction**
Single Run/Multi Run	**Multi run**
Outside Pipe Diameter (mm):	**≥ 500 mm and ≥ 150 mm for positions PA or PC**
Filler Material Designation:	**SG2 (acc. ISO 14341-A: G 42 3 M G3Si 1)**
Filler Material Make:	**Ceweld**
Filler Material Size:	**1,0 mm**
Designation of Shielding Gas/Flux:	**M20 acc ISO 14175 (Ar 85% - CO_2 15%)**
Designation of Backing Gas:	**n.a.**
Type of Welding Current and Polarity:	**DC+**
Mode of Metal Transfer:	**Short Circuit**
Heat Input:	**0,7 – 1,6 kJ/mm**
Welding Positions:	**All, except position PG and J-L045[(*)]**
Preheat Temperature:	**Min. 10 °C**
Interpass Temperature:	**Max. 250 °C**
Post-Heating:	**n.a.**
Post-Weld Heat Treatment and/or Ageing:	**n.a.**

Other Information

Weld preparation and test results, see WPS LAB 1962 Rev. 0 & MME test report 0337/1 dated 05-02-2014 and MME MT report 14KF0009 dated 29-01-2014 & MME UT report 14KF0010 dated 29-01-2014
a =Covers the equal or lower specified yield strength steel of the same group.
*** The range of welding positions is because of the combination with PQR LAB 2955 KVS**

Certified that test welds were prepared, welded and tested satisfactorily in accordance with the requirements of the code/testing standard indicated above.

Location: **Geleen**

Date of Issue: **28 March 2014**

Surveyor

Lloyd's Register Nederland B.V.
A member of the Lloyd's Register group
Raymond ten Vaarwerk
Witnessed Reviewed Examined
Lloyd's Register

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Surveyor to Lloyd's Register EMEA

A member of the Lloyd's Register Group

Examining Body **Lloyd's Register Nederland B.V. Notified Body; identification 0038**

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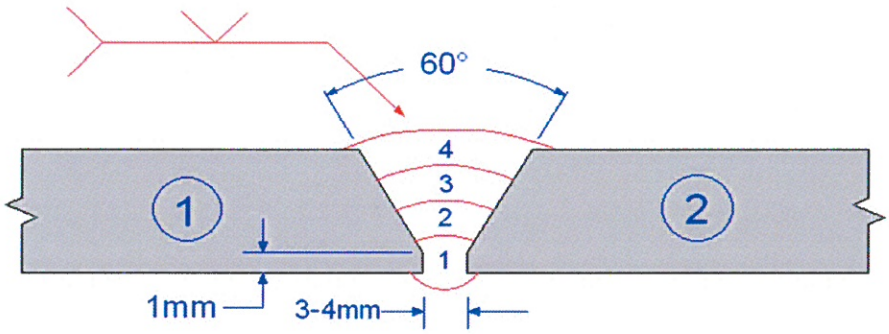
pWelding Procedure Specification

(Voorlopige las-methode beschrijving)

Volgens EN ISO 15609-1:2004

Van der KOLK Staalbouw b.v.

Klant: ---		**pWPS nr.:** LAB 1962		**Aanvullende info:**
Project: ---		**Revisie nr.:** 00		
Project nr.: ---		**Order nr.:** ---		
Inspectie, testen en toezicht: Lloyd`s register / MME Ridderkerk	**Tekening nr.:** ---			
Omvang werkzaamheden: Lasmethode kwalificatie	**Basis materiaal:** 1:	**Groep:** 1.2 acc. EN ISO 15608		**Afmeting:** Plaat 15mm
		Type: S355J2+N acc. EN 10025-2		
		Analyse: **%C:** 0,15 **Ceq. (IIW):** 0,39		
	Basis materiaal: 2:	**Groep:** 1.2 acc. EN ISO 15608		**Afmeting:** Plaat 15mm
		Type: S355J2+N acc. EN 10025-2		
		Analyse: **%C:** 0,15 **Ceq. (IIW):** 0,39		
Lasproces: **Doorlassing:** 135-D (GMAW)	**Vullagen:** 135-D (GMAW)		**Tegenlassen:** nvt.	**Oplassen:** nvt.
Laspositie: PF (3G)	**Hechtlassen (proces / methode)**	135-S (GMAW) mbv. hechtplaten om vervorming te voorkomen.		**Minimale werkstuktemperatuur:** ≥ 10°C
Voorwarmen, methode & details:	**Werkstuk temperatuur:**	≥ 10°C	**Tussenlaag temperatuur:** ≤ 250 °C	**Nawarmen:** --- °C
	nvt.		**Isolatie:** ☐ Yes ☒ No	**Opwarm/afkoelsnelheid:** --- °C/uur
Warmtebehandeling na lassen: nvt.				**Nawarmtijd:** --- uur
Afstand contactbuis/werkstuk: 10-15mm	**Diameter gasmondstuk:** 14-18mm			



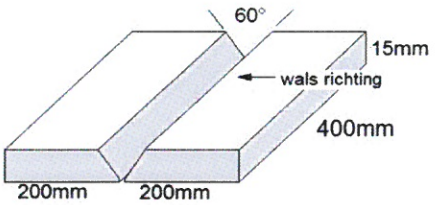
Opmerkingen:

Lastoevoegmateriaal:

Alloy ER70S-6 (AWS A5.18:ER70S-6)

Beschermgas / Poeder:

Argon 85% + Co_2 15% (M21 volgens EN ISO 14175)



Te lassen werkstuk:

Lasnaad voorbewerking / laagopbouw / lasvolgorde: ☒ **Zwaaien** ☐ **Snoeren**

Snoer / laag:	Las-proces / metaal-overgang:	Lastoevoeg materiaal:	Dia-meter:	Bescherm gas / poeder:	Stroom / instellingen: Stroomsoort / polariteit:	Stroom (Amp.)	Voltage	Bescherm-gas (l/min)	Voorloop snelheid (mm/min)	Q ☒ E ☐ K= 0.8 Warmte inbreng (KJ/mm)
1	135-D	ER70S-6	Ø1,0	M21	DC+	90 - 110	17 - 19	14 - 16	110 - 130	0.6 - 0.9
2	135-D	ER70S-6	Ø1,0	M21	DC+	120 - 140	18 - 20	14 - 16	80 - 120	0.9 - 1.7
3 ~ 4	135-D	ER70S-6	Ø1,0	M21	DC+	120 - 140	18 - 20	14 - 16	80 - 120	0.9 - 1.7

Voorbewerking lasnaad: Autogeen snijden/machinaal bewerken, de laskanten dienen vrij te zijn van walshuid, verf, roest, vet of andere verontreinigingen.

Bewerken van de doorlassing: nvt. **Toorts positie:** 80°

Details tegenbewerking/smeltbadondersteuning: nvt.

Lasmethode kwalificatie nr.:	**Geldigheidsgebied volgens:** EN ISO 15614-1:2012	**Lassers kwalificatie volgens:**
nvt.	**Type las:** BW + FW **t:** 7,5 ~ 30mm **D:** Ø >500 mm **a:** ml: Unlimited **Laspositie:** PF	EN ISO 9606-1:2013 (NEN EN 287-1:2011)

NDT / DT	**Volgens EN ISO 15614-1:2012 (Impact-test @-20°C)**

Opsteller voor fabrikant:	**Goedgekeurd/gecontroleerd door klant:**	**Goedgekeurd door Keurmeester of keuringsinstantie:**
Ardi Verduyn (IWT 650)		
Datum: 14-12-2013	**Datum:**	**Datum:**