



ATTESTATION

Le Soussigné
The undersigned SURVEYOR

du BUREAU VERITAS, agissant dans le cadre des conditions générales de la Branche Industrie
from BUREAU VERITAS, acting within the scope of the general conditions of the Industrial Branch
(mentionnées au verso), certifie
(mentioned on the back), certifies

The following tests were performed at TECHLOK LTD, Manufacturer of TECHLOK PIPELINE CONNECTORS.

TEST CARRIED OUT AT:- UNIT 18,
BAGLAN BAY
BAGLAN INDUSTRIAL PARK,
PORT TALBOT
WEST GLAMORGAN. SA12 7DJ.

TEST PERFORMED: FIRE TEST IN COMPLIANCE WITH
THE API SPEC 6FB PART 2 TOGETHER
WITH CUSTOMER REQUIREMENTS.

TEST ASSEMBLY NO: TFA002

ASSEMBLY SUB-ELEMENTS: TFO17 Bin Adaptor spool (lower)
: TFO28 Bin Adaptor spool (upper)
: TFO09 Bin Butt weld hub with
integral tappings.
: TFO10 Bin Butt weld hub.
: TFO14 Flexible interspace ring.
: R072201A2 Size 72 seal ring.
: C008204 Bin Clamp set plus bolting.

SUB-ELEMENT MATERIALS: TFO17 ASTM A350 LF2 52000 psi yield
: TFO28 ASTM A350 LF2 52000 psi yield
: TFO19 ASTM A350 LF2 52000 psi yield
: TFO10 ASTM A350 LF2 52000 psi yield
: TFO14 AISI 4140
: R072201A2 AISI 4140 PTFE coated
: C008204 AISI 4140
: Bolting ASTM A193 B7/A194 2H

TEST DATE: 14th June 1990

TEST PARAMETERS.

The fixture was fully thermocoupled and pressurized to full rated pressure with the pressure being maintained during the test duration.





The test was done in two parts, the aim of the first test was to exceed the bending requirements of API. The second part was to qualify the Techlok connector to pressure only requirements.

TEST PROCEDURE STEPS.

The following stages were taken to qualify the 3in connector:-

- a. The fixture was pressurized to 265 bar. This pressure was maintained during the entire test duration to within $\pm 10\%$
- b. The burner was ignited and achieved a flame temperature in excess of 1093°C within two minutes. Average temperature maintained throughout the test was 1150°C .
- c. Within fifteen minutes of the burners being ignited both calorimeters had exceeded the minimum required temperature of 982°C . Maximum average calorimeter temperature achieved was 1013°C .
- d. After twenty-five minutes a bending moment was applied at regular two minute intervals.
- e. The highest bending moment achieved without loss of pressure was 28664.5 ft. lbs.
- f. The burner was extinguished and the bending moment removed. The fixture was then allowed to cool with no leakage occurring. During the cool down period the internal pressure was maintained to within $\pm 10\%$.
- g. Once the fixture reached ambient temperature the internal pressure was removed.
- h. The fixture was re-pressurised to 265 bar and the burner ignited.
- i. The flame temperature exceeded the minimum flame temperature of 1093° within two minutes and maintained an average flame temperature of 1127.5°C .
- j. Within fifteen minutes of the burner being ignited the calorimeter exceeded the minimum temperature 982° with a maximum calorimeter temperature achieved of 1012°C .
- k. During the duration of both the burn periods NO leakage was observed.
- l. After 30 minutes the burner was extinguished and the fixture was allowed to cool to ambient temperature with no loss of pressure.





- a. To test the integrity of the seal, the fixture was depressurised and subsequently repressurised and held for five minutes with NO loss of pressure.

All temperature data is contained on chart Nos. TPOC3 and TPOC4.

TEST INTERPRETATION.

The Techlok 8in72 Connector test fixture fully met all the criteria set out in the API Specification 6FB Part Two. This included paragraph 1.2 of Section 2 of the respective specification, pressure only, and the additional requirements of external bending (paragraph 1.3). Both parts were performed on the same fixture with no adjustments or re-tightening of bolts between tests.

Dated this 18th. day of July 1990

at CARDIFF.

M.C. Beavell
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Surveyor

