

16 JUL 1997

Project: **Procol Engineering**

Certificate Number: **SOU9720279/2/A1**

Client: **Warrington Fire Research**

Office: **Crawley**

Client's Order Number: **Test No. R13522**

Date: **14/07/97**

Order Status: **Incomplete**

Inspection Dates

First: **28/04/97**

Final: **28/04/97**

This certificate is issued to **Warrington Fire Research** to certify that R.D.Winstanley the undersigned surveyor to Lloyd's Register did, at their request, attend their premises at Trowers Way, Redhill, Surrey on the above date for the purpose of witnessing fire tests on the undernoted valve tested on behalf of **Procol Engineering AG**.

Description.

2-Off                      Procol Series AF 90 Flanged Ball Valve.  
Split Body Size 1" Full Port PN 40.

Scope of Inspection

- a. Visual examination.
- b. Witness Fire Tests No.R13522 in accordance with BS 6755: Part 2: 1987
- c. Endorse Test Results and issue Lloyd's Register Certificate.

A Fire Test in accordance with BS 6755: Part 2: 1987 was witnessed by the undersigned during which the following was observed.

THROUGH LEAKAGE DURING BURN PERIOD.	380ml
EXTERNAL LEAKAGE	Zero
BURN PERIOD	30 mins.
TEST PRESSURE	HP 435psig LP 42psig

On completion of testing and cooling down the valve was visually examined and as far as could be determined found to be satisfactory and free from any significant distortion.

In view of the tests now conducted it is considered that the performance of the above valve has been satisfactorily demonstrated as meeting the requirements of BS 6755: Part 2: 1987 and that the results reported for Test No. R13522 are true and accurate.



R.D.Winstanley  
Senior Surveyor to Lloyd's Register.

NOTICE: This certificate is subject to the terms and conditions overleaf, which form part of this certificate.

Project: Procol Engineering AG

Certificate Number: EDB 701640/3

Client: Score (Europe) Limited

Office: EDINBURGH

Client's Order Number: CC338/71751

Date: 29th October, 1997

Order Status: Complete

Inspection Dates

First: 15.10.97

Final: 27.10.97

*This certificate is issued to* Score (Europe) Limited, as at their request the undersigned Surveyor to this Society attended their Works at Woodend, Cowdenbeath, Fife, for the purpose of witnessing a Fire Test on a Ball Valve stated to be manufactured by Procol Engineering AG Drawing Number 90.50.40.AF.

Details of the Valve are as follows:-

Size: 2" Class PN40 Ball Valve Series AF90  
Seats: PTFE  
Body: CF8M/1.4408  
Adaptors: CF8M/1.4408  
Ball: Stainless Steel 316/1.4401

Valve stamped: Score Unique Number 571751-1

Temperature Thermocouples were placed as follows:-

7. "Stem Flame" Temperature
8. "Body Flame" Temperature
9. "Stem Calorimeter Cube" Temperature
10. "Body Calorimeter Cube" Temperature
11. "Chamber" Temperature
12. "Body Skin" Temperature

The fire test was carried out in accordance with BS 6755 Pt2 1987.

The valve was mounted into the test stand with Calorimeter Cubes and flame environment thermocouples in their appropriate locations, which were connected to a Chessel Model 4001 temperature recorder with automatic printout facilities, Serial Number 0190-419119 calibration of which was verified.



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NOTICE: This certificate is subject to the terms and conditions overleaf, which form part of this certificate.

[CRM 1121 (08/94)]

Lloyd's Register of Shipping, registered office: 71 Fenchurch Street, London EC3M 4BS

*CR*

Certificate Number: EDB 701640/3  
Office: EDINBURGH  
Date: 29th October, 1997  
Page: 2 of 2

All measuring and test equipment used was correctly calibrated.

Both the inlet and outlet pipework were connected to the valve, with the valve in the partially open position the system was checked for leaks by pressurising to 1.5 times the maximum permissible working pressure and found tight.

During burn period the pressure was maintained at 30.0 Bar G by occasional manual adjustment.

On completion of the burn period of 30 minutes duration the valve was cooled naturally at 100°C.

The results of the fire test were then recorded as follows:-

Through Seat Leakage at high test pressure of 30.0 Bar G during burn period = 1800ml over 30 minutes = 30ml/in/min (allowable 400ml/in/min).

Cool down period took 32 minutes for skin temperature to reach 100°C

External leakage (high test pressure) during burn and cool down periods = 440ml = 3.5ml/in/min (allowable 100ml/in/min).

Through Seat Leakage at low test pressure of 2.8 Bar G after cool down = 0ml over 5 minutes = 0ml/in/min (allowable 40ml/in/min).

External leakage (low test pressure) after cool down = 0ml = 0ml/in/min (allowable 20ml/in/min).

Torque to operate valve at high test pressure differential = 116Nm.

External leakage with valve pressurised to 30.0 Bar G in fully open position = 0ml over 5 mins = 0ml/in/min (allowable 200ml/in/min).

The test was concluded at this point.

The Valve was dis-assembled and examined to verify compliance with Drawing Number 90.50.40.AF and found to comply.

In respect of the test results now stated, it is considered that the test valve complies with the requirements of BS 6755 Part 2, 1987.

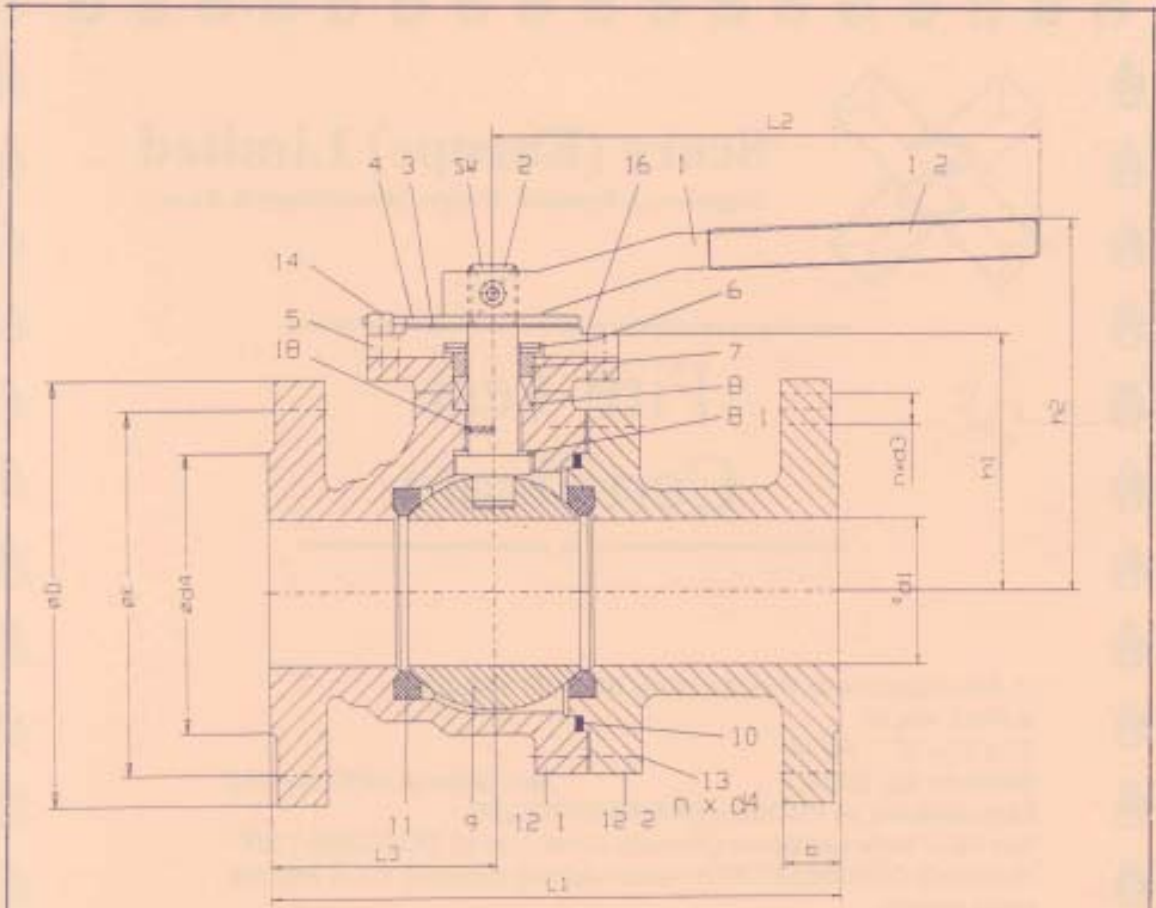


*W. Campbell*  
Surveyor to Lloyd's Register  
W.L. CAMPBELL

NOTICE: This certificate is subject to the terms and conditions overleaf, which form part of this certificate.

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Lloyd's Register of Shipping, registered office: 21, Fenchurch Street, London EC3M 4BS



- |     |                   |      |                    |      |                     |
|-----|-------------------|------|--------------------|------|---------------------|
| 1   | Handle CF-8M      | 7    | Stemseal-follower  | 12.2 | Flange CF-8M/1.4408 |
| 1.2 | PVC-sleeve        | 8    | Packing graphite   | 13   | Bolts A2-70         |
| 2   | Stem 316          | 8.1  | Washer PTFE        | 14   | Bolts A2-70         |
| 3   | Shim PTFE         | 9    | Ball 316           | 16   | Bolts A4-70         |
| 4   | Stopplate         | 10   | Body seal graphite | 18   | Antistatic device   |
| 5   | ISO Topflange     | 11   | Seat virgin PTFE   |      |                     |
| 6   | Belleville washer | 12.1 | Body CF-8M/1.4408  |      |                     |



DN 50 - 2"	PN 40	FLANGE BALLVALVE SERIES AF90
	13/10/97	No. 90.50.40AF

**ENGINEERING**  
**PROCOL** ≈



# Score (Europe) Limited

Engineering Research, Design, Manufacture & Repair

## Fire Test Certificate

In Accordance with Specifications BS 6755 PT2.1987.

a BALL VALVE

Size 50 - 2" PN 40

Serial no NO DATA

Seat Material VIRGIN PTFE

Manufactured by PROCOL ENGINEERING AG

has been tested by Score (Europe) Limited on 15 OCTOBER 1997

at Score's COWDENBEATH works and has complied in full with the requirements.

Test carried out by J SMITH / D GRAY Score (Europe) Limited

Test witnessed by W.J.MARKWAT Manufacturer

To Certifying Authority

