Lloyd's Register Starline Ball Vaves as stated in the ranges below

Office: **Aberdeen**

Date: **14th August, 2009**

This certificate is issued to **Starline S.P.A.**

Please state required company detailsComponent Description
DN08 to DN300 – PN16 TO PN420 (CLASS 150 – 2500) – Floating and Trunnion
Component Identification

This certificate is issued to the above manufacturer to certify that Lloyd's Register EMEA have examined returns supplied by Starline S.P.A. and verify the findings indicate the following:

1. In respect of the failure mode **(Fail to Close)**, the demonstration of >90% safe failure fraction makes it suitable for **SIL 3** application when used in a simplex mode, without redundancy.
2. A probability of failure on demand of **6.6 10^{-4}** makes it suitable for **SIL 3,** assuming a proof test interval of 3 months.
3. Appropriate control over purchased materials.
4. The valves must be correctly designed into a Safety Instrumented Function per the requirements of the Safety Manual.
5. The results of the proof tests and any revealed failures need to be correctly recorded and analysed to ensure the integrity requirements are met throughout the lifecycle of the plant/process.

Applicable Standards
IEC 61508 – Functional Safety of Electrical/Electronic/ Programmable Electronic Safety Related Systems
Design Temperature
Temperature rating: -196°C +600°C depending on selected materials (steel and soft parts like seats and seals)
Maintenance schedule
It is recommended that a periodic visual and operation evaluation is carried out every 3 months for SIL 3 applications and at least once a year for other applications
Product life
As determined by the Maintenance schedule above
Control of Internal Production Compliance
ISO 9001: LRC160047 valid to 16 June 2010

This certificate is issued to the above client to certify that the valves described herein has been subjected to a reliability and integrity review in accordance with the requirements of Lloyds Register and the standards indicated above.
This certificate is not valid for equipment, the design or manufacture of which has been varied or modified from the specimen tested. The manufacturer should notify Lloyd's Register of any modification or changes to the equipment in order to obtain a valid Certificate.

Date of issue: **14th August, 2009**

Expiry date: **13th August, 2014**

Ian Harris.

Ian Harris
Surveyor to Lloyd's Register EMEA

A member of the Lloyd's Register Group