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Materials	TITLE:	SPECIFICATION FOR FLOWGUARD BLADDERS	

1. Scope

- 1.1. The specification describes the requirements of bladders installed in Flowguard vessels. These bladders are used in processes under varying pressures and temperatures. The bladders will be subjected to large amounts of strain in localised areas and may contain nitrogen at pressures in excess of 1500 Bar G.
- 1.2. This specification is to ensure that the bladders are suitable for their intended use with a reasonably long life of service.

2. Reference Documents

- 2.1. ISO 2230:2002 Rubber Products – Guidelines for Storage
- 2.2. FSD-9-3 Bladder Mould Length Dimensions
- 2.3. FSD-9-4 Bladder Material Mechanical Properties

3. Elongation at Break

- 3.1. All fluorelastomers and elastomers should achieve a figure in excess of 355%.

4. Hardness

- 4.1. Hardness shall be between 55 and 70 Shore Hardness measured on a standard test sample for each batch of rubber used.

5. Wall Thickness

- 5.1. The dimensions of each bladder must be checked against the dimensions list in FSD-9-3.

6. Permeability

- 6.1. All compounds used shall resist the diffusion of nitrogen through the wall of the bladder.

7. Inclusions

- 7.1. The bladders should be free of inclusions. The rubber shall be screened before use to exclude inclusions below an agreed size and tooling shall be cleaned between each moulding to ensure that there is no contamination.

8. Air Traps


- 8.1. The bladders shall be free of air traps.

9. Surface Finish

- 9.1. The tools shall be maintained in good order, free from scratches and dents which could cause stress raisers in the moulding.

10. Compound

- 10.1. As the bladders may be used in food processing plants the compound shall not contain any plasticisers which are liable to leach out of the moulding.

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11. Abrasion Resistance

11.1. The bladders may be used with fluid of an abrasive nature and shall have reasonable tolerance to abrasion.

12. Compression Set

12.1. Compression set figures are to be agreed with the supplier and listed in document FSD-9-4.

13. Marking

13.1. All bladders shall be marked with a batch number that identifies the quarter and year of vulcanisation or manufacture and the type of elastomer. The abbreviation for the elastomer is identified in FSD-9-4.

14. Storage

14.1. Any bladders which are stored for greater than an agreed time before despatch shall be stored in accordance with ISO 2230 except with regard to the marking as mentioned in 13.

15. Approvals

Prepared By: G. Lowndes Title: Senior Design Engineer Date: 30 June 06

Reviewed By: A. Hay Title: Works Manager Date: 05 July 06

Approved By: A. Hay Title: Works Manager Date: 05 July 06