

ESDU SPF-M3-3

Preliminary design of the annulus test section



© Imperial College London

Unamended
Issued 01 Jun 2007
1

Imperial College
London

The Preliminary Design of the Annulus Test Section



Documents
Document Sharing Hub

Sub-Project F Annulus Flow Tests

Dr. Lan Liu

28th March 2006

Page 2

© Imperial College London

Criteria for Test Section Design

- **Joule heating**
- **Good electrical conductions for heated parts**
- **Good seal for high pressure and high temperature fluid whilst good electrical insulation**
- **Allowing thermal expansion**
- **Keeping non-heated parts relatively cool**
- **Ability to disassemble without damaging fouling layer**
- **Even fluid distribution**
- **Accurate fouling layer measurement**

Sealing

- Biggest challenge is the combination of high pressure and high temperature
 - Stuffing box sealing
 - O-ring sealing