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# MATERIAL TEST REPORT

(EN10204 3.1 / ISO 10474 3.1)

 **BMT CO., LTD**

|                    |                            |              |               |
|--------------------|----------------------------|--------------|---------------|
| CUSTOMER           | FLOWSERVE-santa isabel     | CERT. No.    | MTR-170915-01 |
| P.O. No.           | sample0831                 | PROJECT NAME | N/A           |
| SPECIFICATION      | ASTM A276-15               | STEEL GRADE  | 316/316L      |
| Raw Material Maker | SEAH SPECIAL STEEL CO.,LTD | ISSUE DATE   | Sep. 15, 2017 |

| Item No. | HCN (Heat No.) | DESCRIPTION        | Q'TY (EA) | Heat Treatment                     | Dimension and Visual |
|----------|----------------|--------------------|-----------|------------------------------------|----------------------|
| 1        | SJJ (S26972)   | REDUCER (SR-10M-8) | 90        | Solution Treatment & Cold Finished | GOOD                 |
|          |                |                    |           |                                    |                      |

**CHEMICAL COMPOSITION (%)**

| Item No. | HCN (Heat No.) | SPEC | C     | Si    | Mn    | P      | S      | Cr     | Mo    | Ni     |  |
|----------|----------------|------|-------|-------|-------|--------|--------|--------|-------|--------|--|
|          |                | Min  | -     | -     | -     | -      | -      | 16.00  | 2.00  | 10.00  |  |
|          |                | Max  | 0.03  | 1.00  | 2.00  | 0.045  | 0.030  | 18.00  | 3.00  | 14.00  |  |
| 1        | SJJ (S26972)   | H    | 0.022 | 0.385 | 1.856 | 0.0314 | 0.0223 | 16.720 | 2.056 | 10.114 |  |
|          |                |      |       |       |       |        |        |        |       |        |  |


**MECHANICAL PROPERTIES**

| Item No. | HCN (Heat No.) | SPEC | TS    | YS    | EL    | RA   | *Mechanical test by Raw Material Maker |      |
|----------|----------------|------|-------|-------|-------|------|--|------|
|          |                |      | KSI   | KSI   | %     | %    |  |      |
|          |                |      | Min   | 125.0 | 100.0 | 12.0 |  | 35.0 |
|          |                |      | Max   | -     | -     | -    |  | -    |
| 1        | SJJ (S26972)   |      | 140.9 | 125.3 | 23.0  | 60.9 |  |      |
|          |                |      |       |       |       |      |  |      |

**REMARK**

\*H : Heat Analysis

WE HEREBY CERTIFY THAT MATERIAL HAS BEEN TESTED IN ACCORDANCE WITH THE SPECIFICATION.

■ Approved by :   
 QM Dept. General Manager / KWANG WOOK, SHIM