

## LAMPIRAN



**LABORATORIUM BAHAN TEKNIK**  
**DEPARTEMEN TEKNIK MESIN SEKOLAH VOKASI**  
**UNIVERSITAS GADJAH MADA**

**HASIL PENGUJIAN KEKERASAN**

No. 077 / P.Kkr / BT.DTM / 2018

**Spesimen Friction Welding Stainless Steel 304 - Aluminium 6061 T6**  
**Variasi Tekanan.**

Lembar asli, tidak untuk digandakan

| No | Kode   | Jarak dr sambungan | d <sub>1</sub><br>( $\mu\text{m}$ ) | d <sub>2</sub><br>( $\mu\text{m}$ ) | d <sub>rata-rata</sub><br>( $\mu\text{m}$ ) | Kekerasan<br>(VHN) |      |
|----|--------|--------------------|-------------------------------------|-------------------------------------|---|--------------------|------|
| 1  | 30     | Al 6061 T6         | 10.0 mm                             | 75.0                                | 73.0  | 74.00              | 67.7 |
|    |        |                    | 5.5 mm                              | 90.0                                | 87.0  | 88.50              | 47.4 |
|    |        |                    | 3.5 mm                              | 87.0                                | 86.0  | 86.50              | 49.6 |
|    |        |                    | 1.5 mm                              | 87.0                                | 86.0  | 86.50              | 49.6 |
|    |        |                    | 0.5 mm                              | 84.0                                | 82.0  | 83.00              | 53.8 |
|    |        |                    | 0.0 mm                              | 80.0                                | 80.0  | 80.00              | 58.0 |
|    | SS 304 | 0.0 mm             | 39.0                                | 38.0                                | 38.50                                       | 250.2              |      |
|    |        | 0.5 mm             | 39.0                                | 39.0                                | 39.00                                       | 243.8              |      |
|    |        | 1.5 mm             | 40.0                                | 40.0                                | 40.00                                       | 231.8              |      |
|    |        | 3.5 mm             | 39.0                                | 40.0                                | 39.50                                       | 237.7              |      |
|    |        | 5.5 mm             | 39.0                                | 40.0                                | 39.50                                       | 237.7              |      |
|    |        | 10.0 mm            | 39.0                                | 40.0                                | 39.50                                       | 237.7              |      |

| No | Kode   | Jarak dr sambungan | d <sub>1</sub><br>( $\mu\text{m}$ ) | d <sub>2</sub><br>( $\mu\text{m}$ ) | d <sub>rata-rata</sub><br>( $\mu\text{m}$ ) | Kekerasan<br>(VHN) |      |
|----|--------|--------------------|-------------------------------------|-------------------------------------|---|--------------------|------|
| 2  | 35     | Al 6061 T6         | 10.0 mm                             | 72.0                                | 71.0  | 71.50              | 72.5 |
|    |        |                    | 5.5 mm                              | 67.0                                | 84.0  | 75.50              | 65.1 |
|    |        |                    | 3.5 mm                              | 85.0                                | 82.0  | 83.50              | 53.2 |
|    |        |                    | 1.5 mm                              | 83.0                                | 80.0  | 81.50              | 55.8 |
|    |        |                    | 0.5 mm                              | 81.0                                | 75.0  | 78.00              | 61.0 |
|    |        |                    | 0.0 mm                              | 80.0                                | 75.0  | 77.50              | 61.7 |
|    | SS 304 | 0.0 mm             | 39.0                                | 39.0                                | 39.00                                       | 243.8              |      |
|    |        | 0.5 mm             | 39.0                                | 40.0                                | 39.50                                       | 237.7              |      |
|    |        | 1.5 mm             | 40.0                                | 40.0                                | 40.00                                       | 231.8              |      |
|    |        | 3.5 mm             | 40.0                                | 40.0                                | 40.00                                       | 231.8              |      |
|    |        | 5.5 mm             | 40.0                                | 39.0                                | 39.50                                       | 237.7              |      |
|    |        | 10.0 mm            | 40.0                                | 39.0                                | 39.50                                       | 237.7              |      |

*Keterangan :*

1. Menggunakan metode uji Vickers dengan pembebanan 200 gf, 5 detik
2. Satuan pengukuran diagonal jejak indentor dalam  $\mu\text{m}$
3. Pengujian dilakukan pada tanggal 25 Mei 2018

*Lembar 1 dan 2*



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| No | Kode   | Jarak dr sambungan | d <sub>1</sub><br>( $\mu$ m) | d <sub>2</sub><br>( $\mu$ m) | d <sub>rata-rata</sub><br>( $\mu$ m) | Kekerasan<br>(VHN) |      |
|----|--------|--------------------|------------------------------|------------------------------|--------------------------------------|--------------------|------|
| 3  | 40     | Al 6061 T6         | 10.0 mm                      | 71.0                         | 71.0                                 | 71.00              | 73.6 |
|    |        |                    | 5.5 mm                       | 88.0                         | 88.0                                 | 88.00              | 47.9 |
|    |        |                    | 3.5 mm                       | 88.0                         | 84.0                                 | 86.00              | 50.1 |
|    |        |                    | 1.5 mm                       | 86.0                         | 86.0                                 | 86.00              | 50.1 |
|    |        |                    | 0.5 mm                       | 79.0                         | 80.0                                 | 79.50              | 58.7 |
|    |        |                    | 0.0 mm                       | 77.0                         | 76.0                                 | 76.50              | 63.4 |
|    | SS 304 | 0.0 mm             | 40.0                         | 40.0                         | 40.00                                | 231.8              |      |
|    |        | 0.5 mm             | 40.0                         | 40.0                         | 40.00                                | 231.8              |      |
|    |        | 1.5 mm             | 39.0                         | 39.0                         | 39.00                                | 243.8              |      |
|    |        | 3.5 mm             | 40.0                         | 39.0                         | 39.50                                | 237.7              |      |
|    |        | 5.5 mm             | 39.0                         | 39.0                         | 39.00                                | 243.8              |      |
|    |        | 10.0 mm            | 40.0                         | 40.0                         | 40.00                                | 231.8              |      |

**Keterangan :**

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Yogyakarta, 25 Mei 2018



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Lembar asli, tidak untuk digandakan

Lembar 2 dari 2