

 <b>LAB MEKANIK POLSRI</b>	<b>LEMBAR HASIL PENGUJIAN BAHAN DENGAN METODE HARDNESS BRINNEL</b>	 <b>TEKNIK MESIN</b>
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Lembar Data Pengujian

Tanggal Pengujian : 5 April 2016

Nama : Harry Kurniawan (0613 3020 0130)

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Hasil Pengujian Bahan Profil U Dengan Metode Hardness Brinell (HB)

No	Bahan	D (mm)	P (kg)	d (mm)	dr (mm)	HB (kg/mm <sup>2</sup> )
1	Carbon steel	Ø2,5	187,5	d1 = 1,35	1,36	118,558
				d2 = 1,37		
2				d1 = 1,33	1,33	124,75
				d2 = 1,33		
3				d1 = 1,34	1,36	118,558
				d2 = 1,38		
4				d1 = 1,41	1,44	104,54
				d2 = 1,47		
5				d1 = 1,36	1,37	116,822
				d2 = 1,38		

Rumus mencari nilai HB :

$$HB = \frac{2.P}{\pi.D (D - \sqrt{D^2 - dr^2})}$$

Contoh perhitungan HB1

$$\begin{aligned}
 HB &= \frac{2.P}{\pi.D (D - \sqrt{D^2 - dr^2})} \\
 &= \frac{2.187,5}{3,14.2,5 (2,5 - \sqrt{2,5^2 - 1,36^2})} \\
 &= 118,558 \text{ kg/mm}^2
 \end{aligned}$$

$$\begin{aligned}
 HB \text{ Total} &= \frac{HB1+HB2+HB3+HB4+HB5}{5} \\
 &= 116,645 \text{ kg/mm}^2
 \end{aligned}$$