

Product name	Average Thickness (mm)	Average Width (mm)	Average Length (mm)
HM-20 Grade I	0.70	15.83	56.96
HM-20 Grade II	0.53	15.49	57.08
HM-30 Grade I	0.59	15.65	56.98
HM-30 Grade II	0.76	15.51	57.14
HM-60 Grade I	1.05	15.47	57.00
HM-1.2T	1.20	15.03	57.08
HM-1.4T	1.40	15.01	57.22
HM-2.0T	2.00	15.03	57.06

Table 2. Specimen dimensions

## Apparatus

A 30 kN MTS testing machine (Model: E45) was used to conduct this test.

A 50 mm displacement transducer was used to measure the elongation of the specimen.

## Test Procedure

Tests were conducted under a temperature of  $23^{\circ}\pm 3^{\circ}\text{C}$ .

All specimens were loaded at a rate of crosshead movement of 2.0 mm/min until failure.

Load versus crosshead displacement data throughout the test method, maximum load, final load, and load at any obvious discontinuities in load-displacement data were recorded at a rate of 20 Hz.

## Test Results

Five specimens were tested for each type of product. Tensile strength is calculated using equation 1.

$$f = \frac{P_{max}}{b \cdot t} \quad \text{Eq.1.}$$

Where  $f$  is the tensile strength;  $P_{max}$  is maximum force;  $b$  is width of the specimen;  $t$  is the theoretical thickness of the CFRP sheet. For HM-20,  $t = 0.111$  mm; For HM-30,  $t = 0.167$  mm; For HM-60,  $t = 0.333$ mm.

Five specimens were tested for each type of product. Test results are summarized in Table 3-5.

Product name	Tensile Strength (MPa)		COV (%)
	Mean	Standard Deviation	
HM-20 Grade I	4318.07	90.52	2.10
HM-20 Grade II	3708.16	180.34	4.86
HM-30 Grade I	4840.44	151.47	3.13
HM-30 Grade II	4165.16	116.79	2.80
HM-60 Grade I	4123.43	101.25	2.46
HM-1.2T	2743.26	127.93	4.66
HM-1.4T	3044.36	129.72	4.26
HM-2.0T	2999.75	172.8	5.76

Table 3. Tensile Strength