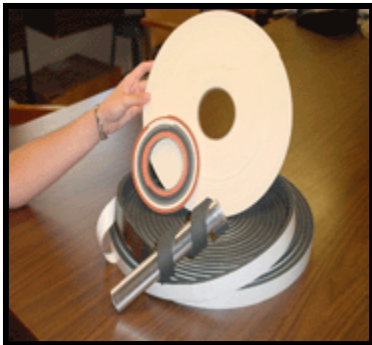


ASTM 1056 PRESENTATION



Understanding ASTM D1056

American Society For Testing Materials D1056 (ASTM D1056)

- **Standard Specification For Classification of Flexible Cellular Materials**
- **Sponges (Open Cell) and Expanded (Closed Cell) Foams**
- **Reviewed and revised periodically**
- **ASTM D 1056-68 - The last two digits refer to the year of the test method issued (1968)**
- **If there is no year mentioned that means the most recent version of ASTM D 1056 is being referred to.**
- **Sponge products are identified by a three-character Grade Number (example: 2A2).**
- **The three characters represent Type, Class and Grade.**

Understanding ASTM D1056

American Society For Testing Materials D1056 (ASTM D1056)

- **Type**
Type 1 = Open cell
Type 2 = Closed cell
- **Class**
Class A = Non-oil resistant (example: EPDM)
Class B = Oil resistant, low swell (example: Nitrile)
Class C = Oil resistant, medium swell (example: Neoprene)
Class D = Extreme temperature resistance (example: Silicone)
- **Grade**
Grade ratings represent compression deflection, or the amount of force in pounds per square inch to deflect the sample 25% of its height.
 - Grade 0 = less than 2 psi**
 - Grade 1 = 2-5 psi**
 - Grade 2 = 5-9 psi**
 - Grade 3 = 9-13 psi (for classes A, B, C) 9-15 psi (for class D)**
 - Grade 4 = 13-17 psi (for classes A, B, C) 15-22 psi (for class D)**
 - Grade 5 = 17-25 psi (for classes A, B, C) 22-30 psi (for class D)**

Understanding ASTM D1056

American Society For Testing Materials D1056 (ASTM D1056)

Suffix Letter Test Required

A Heat resistance

**C Ozone or weather resistance
resistance**

E Fluid resistance (Fuel B)

G Tear resistance

K Adhesion resistance

M Flammability resistance

P Staining resistance

T Tensile and Elongation

B Compression set

D Compression deflection

F Low temperature resistance

J Abrasion resistance

L Water absorption

N Impact resistance

R Resilience

W Density

Z Any special requirements

Suffix numbers that follow the suffix letter denote different testing parameters or conditions for that suffix.

For e.g. B1 stands for C. Set at 70oC (158oF) and B2 stands for C.Set at
at
23oC (74.3oF) or Room Temp.

Understanding ASTM D1056

American Society For Testing Materials D1056 (ASTM D1056)

- **Example Line Call Out for Sponge ASTM D-1056
2C2 A1 B2 E1 Z (Z = material passes FMVSS 302)**

2 - Closed Cell,

C - Medium Oil Swell or Medium Oil Resistance

2 -C.D (25% Compression) 5 to 9psi,

A1 - Change in C.D. after aging for 22h at 100°C to be +/- 30% from Original C.D.,

B2 - Compression Set at 23°C for 22h (50% compression) and after 24h recovery to be max. of 25%,

E1 - Change in weight after 7 days at 23°C in ASTM Reference Fuel B to be max. of 150% and

Z = States special requirement as stated.

Understanding ASTM D1056

American Society For Testing Materials D1056 (ASTM D1056)

ASTM D1056 - 68	ASTM D1056 - 73	ASTM D1056 - 77	ASTM D1056 - 85
RE41 BF1	RE 41 BF1	RE 41 B2F1	2A1 B2F1
SBE 43 BCF2	RE 43 BCE2F2	RE 43 B2C1E2F2	2B3 B2C1F2
SCE 42	RE 42 E1	RE 42 E1	2C2
Types: R (No Oil Resistance) and S (Medium to Low Oil Resistance)	No SBE and SCE. Everything is RE	No SBE or SCE. Everything is RE	A-No Oil resistance B- Excellent Oil Resistance C- Medium Oil Resistance
Type S Class SB - Low Fuel Swell (50% Max.) or Excellent Oil Resistance Class SC – Medium Swell, (150% Max)	Suffix E1 – Medium Oil Swell(150%) Suffix E2 – Low Oil Swell (50%)	Suffix B1 – C. Set at 70°C; Suffix B2 – C. Set at 23°C	
No allowance for Densities under 10 pcf	Density Less Than 10 pcf given greater allowance for Oil Swell. E1-250% and E2 -100%		
Grades: 40, 41,42,43,44 and 45	Grades: 40, 41,42,43,44 and 45	Grades: 40, 41,42,43,44 and 45	Grades: 0,1,2,3,4 and 5

Understanding ASTM D1056

American Society For Testing Materials D1056 (ASTM D1056)

MIL- C - 3133; MIL- STD 670:
Exactly the same as D 1056 and were discontinued in 1986.

SAE J18; Exactly the same as D 1056

ASTM D1667; Very similar to 1056. Specifically for PVC containing closed cell foams.

ASTM D3575; similar to 1056 for polyolefin foams. Plastics like polyethylene and ethylene vinyl acetate.

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