

ABUSE-RESISTANT AND IMPACT-RESISTANT GYPSUM PANELS

Every decision a builder or an architect makes has an effect on building quality. Most buildings have high-traffic, utility or activity areas that are prone to damage from scrapes, abrasions and unintended collisions that may cause disfigurement to the interior wall appearance. Where the potential for impact and/or penetration into the wall cavity is much higher, damage can be more severe, and to address these extreme conditions, abuse-resistant and impact-resistant gypsum panels have been developed. Understanding the difference in performance between abuse-resistant and impact-resistant gypsum panels is essential for specifying the correct product to minimize damage.

Abuse-resistant panels are produced with high density gypsum cores designed to better resist surface abrasion and indentation, and are either unfaced, or feature specially engineered paper or glass-mat facers. Examples of appropriate applications include:

- Classrooms
- Hallways
- Daycare centers
- Healthcare facilities
- Basements
- Recreation rooms



Impact-resistant gypsum panels are manufactured to feature the same surface abrasion and indentation resistance as abuse-resistant gypsum panel products, while incorporating additional core reinforcement and/or enhanced facings that provide greater resistance to more significant impact and wall cavity penetration. Applications include:

- School corridors
- Hospitals
- Dormitories
- Mail rooms
- Loading docks
- Gymnasiums
- Garages
- Stairwells



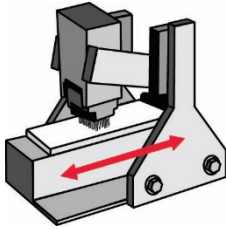
Specifier Note:

Abuse-resistant gypsum panels are recommended for applications that demand additional surface protection from scuffs, scratches and dents. **Impact-resistant** gypsum panels are recommended for applications where both surface abuse and impact damage are concerns. Both abuse-resistant and impact-resistant gypsum panels meet the requirements of ASTM C1629/1629M and comply with the fire resistant requirements for Type X gypsum panels.

Classifications for Abuse-Resistant and Impact-Resistant Panels Based on ASTM C1629/C1629M:

Surface Abrasion

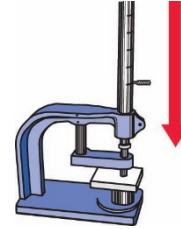
Measures the ability of a gypsum panel surface to resist scratches and scuffs by subjecting the panel to 50 back and forth cycles with a 25 lb weighted wire brush. The depth of the abrasion is measured after cycling.



CLASSIFICATION LEVEL	ABRADED DEPTH MAXIMUM
1	0.126" (3.2 mm)
2	0.059" (1.5 mm)
3	0.010" (0.3 mm)

Surface Indentation

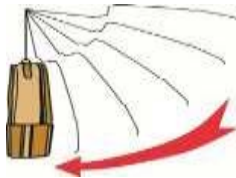
Measures the ability of a gypsum panel surface to resist dents by small hard objects. This is evaluated by dropping a round-tipped rod onto the gypsum panel. The depth of the indentation is measured after impact.



CLASSIFICATION LEVEL	INDENTATION MAXIMUM
1	0.150" (3.8 mm)
2	0.100" (2.5 mm)
3	0.050" (1.3 mm)

Single Drop Soft Body Impact

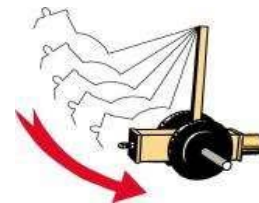
Measures the ability of a gypsum panel to withstand a single impact of a heavy, soft object. This is evaluated by swinging a leather bag loaded with steel pellets into the panel. When the panel fails, the height of the drop and the weight of the bag are used to calculate the energy required to fracture the panel.



CLASSIFICATION LEVEL	SOFT BODY MINIMUM
1	90 ft·lbf (122 J)
2	195 ft·lbf (265 J)
3	300 ft·lbf (408 J)

Hard Body Impact

Measures the ability of a gypsum panel to withstand the impact of a hard object. A panel is impacted with a steel cylinder on a pendulum. The maximum amount of impact force the panel can withstand without breaching the wall cavity is measured.



CLASSIFICATION LEVEL	HARD BODY MINIMUM
1	50 ft·lbf (68 J)
2	100 ft·lbf (136 J)
3	150 ft·lbf (204 J)