



The **Duroplex**[®] System with **DensArmor Plus**[®] Abuse-Resistant or Impact-Resistant Panels

Architects today are constantly struggling with the challenge of how to design elegant interiors that require a high level of abuse and impact resistance. Medical, judicial, educational, retail and sporting facilities are but a few examples of building types that need to be designed for high traffic situations.

The Duroplex[®] system from Triarch[®] has always provided a higher level of both abuse resistance and impact resistance than traditional roll wallcoverings, high performance paints, or competing brands. Now, test data supports the role that the Duroplex system can play in improving the performance of the leading abuse- and impact-resistant wall panels.

Triarch recently teamed with Georgia-Pacific Gypsum to test the Duroplex system installed over DensArmor Plus[®] Abuse-Resistant and Impact-Resistant wall panels. Duroplex wall finishing systems provide increased overall abuse resistance to these high performing board substrates, providing architects and specifiers with functional design alternatives for high traffic areas.

Call **1-800-537-6111** or visit **www.triarchinc.com** to learn how you can use the Duroplex System with DensArmor Plus interior panels to improve your high traffic wall performance today.



ASTM C 1629* test methodology was used to determine how the Duroplex® system contributes to the performance of DensArmor Plus® Abuse-Resistant and Impact-Resistant wall panels when tested with Duroplex as the finish option. ASTM C 1629 is subdivided into four standardized tests designed to evaluate surface abrasion, indentation and cavity penetration. Results are summarized into a Class 1, 2 or 3 rating as defined by ASTM.

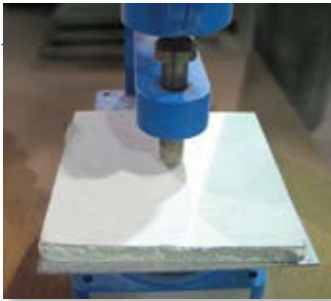


Surface Abrasion Resistance (Modified ASTM D 4977)

This test 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 wire brush. The depth of the abrasion is measured. The test was originally developed to test granule adhesion to mineral surfaced roofing, and was modified by adding a total of 25 pounds of additional weight bearing down on the wire brush.

Performance Requirements: ASTM D 4977

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 Resistance (ASTM D 5420 – Gardner Impact Test)

This test measures the ability of a gypsum panel to resist dents by a small hard object, by raising and dropping a hemi-spherical rod onto the gypsum panel. The depth of the indentation is measured. The original test was developed to test flat, rigid sheets of plastic.

Performance Requirements: ASTM D 5420

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 (Modified ASTM E 695)

This test measures the ability of a gypsum panel to withstand a single impact of a heavy soft object. This test is conducted by swinging a leather bag loaded with 60 lbs. of steel pellets into the panel. When the panel breaks, the height of the drop and weight of the bag are used to calculate the foot-pound measurement required to break the panel. The test was originally developed to measure relative resistance of wall, floor, and roof construction to impact loading.

Performance Requirements: ASTM E 695

CLASSIFICATION LEVEL	SOFT BODY MINIMUM
1	90 ft.-lbs. (112 J)
2	195 ft.-lbs. (265 J)
3	300 ft.-lbs. (408 J)

* ASTM C 1629 test methodology includes four protocols. The Hard Body Impact (Annex A1) was not conducted as it is not applicable to the Duroplex System.

Tests witnessed by Timber Products Inspection, Inc.

Photos courtesy of Georgia-Pacific Gypsum

Beauty is more than skin deep.

Testing confirmed the Duroplex system provides increased abrasion resistance, surface indentation resistance and soft body impact resistance to the wall assembly, particularly when used with DensArmor Plus Abuse-Resistant or Impact-Resistant gypsum boards.

Duroplex® System Test Scores

Here is how the Triarch® Duroplex® system scored when these tests were conducted with and without Duroplex finishes on the tested abuse- and impact-resistant boards:

		CLASSIFICATION LEVEL	
		<i>Uncoated</i>	<i>With Duroplex®</i>
Traditional 5/8" drywall <small>(5/8" drywall scores below a Class 1 on Indentation and Soft Body Impact tests)</small>	Surface Abrasion Resistance ASTM D 4977	>1/4"	Class 3
	5/8" DensArmor Plus® Abuse-Resistant Panels		
	Surface Abrasion Resistance ASTM D 4977	Class 3	Class 3
	Indentation Resistance ASTM D 5420	Class 1	Class 2
	Soft Body Impact ASTM E 695	Class 1	Class 2
5/8" DensArmor Plus® Impact-Resistant Panels	Surface Abrasion Resistance ASTM D 4977	Class 3	Class 3
	Indentation Resistance ASTM D 5420	Class 1	Class 2
	Soft Body Impact ASTM E 695	Class 3	Class 3

Standards of Reference

ASTM C 1629	REFERENCE ASTM	UNITS	ABUSE RESISTANCE LEVEL		
			1	2	3
Surface Abrasion Resistance	D 4977	Inches Max	0.126	0.059	0.010
Indentation Resistance	D 5420	Inches Max	0.150	0.100	0.050
Soft Body Impact	E 694	ft-lbf	90	195	300
Hard Body Impact	C 1628	ft-lbf	50	100	150



Available in 86 standard colors and custom colors limited only by the imagination, the Duroplex system provides the designer all the color and texture options needed to make the form as outstanding as the function.

With the Duroplex system and DensArmor Plus interior panels, great wall performance and supporting sustainable design are not mutually exclusive.

Busch Stadium, home of the St. Louis Cardinals





The Duroplex® system may contribute to sustainable design and LEED® credit points. For details, please visit www.triarchinc.com/green.asp. Call **800-537-6111** or visit us at www.triarchinc.com for key design characteristics, handling and use information and terms of sale regarding the Duroplex system.

The following definitions can help to decide which product is best for high traffic projects:

Abuse Resistance Prevents abrasion or scuffing due to high traffic of daily building operations and occasional indentation of the wall surface. Occasional direct contact by people, cleaning equipment and the gentle shoving or movement of furniture is considered with this classification. Abuse-resistant wall board reduces life cycle costs by increasing the time period between periodic maintenance and restoration of the wall surface and overall appearance. Abuse-resistant wall board is appropriate for interior spaces where a higher resistance to abrasion, occasional indentation and minor impact penetration is required.

Impact Resistance Prevents damage due to high energy or continual impact that breaks into the stud cavity. Impact-Resistant wall board resists this type of damage, increasing useful wall life and reducing wall maintenance costs. Impact Resistance wall board clearly provides a higher level of performance than either Abuse Resistance or conventional drywall.

U.S.A. – Georgia-Pacific Gypsum LLC
Canada – Georgia-Pacific Canada LP

Sales Information & Order Placement

U.S.A. Midwest: **1-800-876-4746**
West: **1-800-824-7503**
South: **1-800-327-2344**
Northeast: **1-800-947-4497**

CANADA Canada Toll Free: **1-800-387-6823**
Quebec Toll Free: **1-800-361-0486**

Technical Information

Georgia-Pacific Gypsum Technical Hotline
U.S.A. and Canada: **1-800-225-6119**
www.gpgypsum.com



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WARRANTIES, REMEDIES AND TERMS OF SALE For current warranty information for DensArmor Plus interior panels, please go to www.gpgypsum.com and select the product for warranty information. All sales of DensArmor Plus interior panels by Georgia-Pacific are subject to our Terms of Sale available at www.gpgypsum.com.

Georgia-Pacific makes no representations or warranties regarding the Duroplex system. For additional information concerning the Duroplex system, please contact Triarch® at 800-537-6111 or go to www.triarchinc.com.

UPDATES AND CURRENT INFORMATION The information in this document may change without notice. Visit our website at www.gpgypsum.com for updates and current information.

CAUTION For fire, safety and use information concerning DensArmor Plus interior panels, go to www.gp.com/safetyinfo. For fire, safety and use information concerning the Duroplex system, please contact Triarch at 800-537-6111 or go to www.triarchinc.com.

HANDLING AND USE—CAUTION DensArmor Plus panels contain fiberglass facings which may cause skin irritation. Dust and fibers produced during the handling and installation of the product may cause skin, eye and respiratory tract irritation. Avoid breathing dust and minimize contact with skin and eyes. Wear long sleeve shirts,

long pants and eye protection. Always maintain adequate ventilation. Use a dust mask or NIOSH/MSHA approved respirator as appropriate in dusty or poorly ventilated areas. For handling and use information concerning the Duroplex system, please contact Triarch at 800-537-6111 or go to www.triarchinc.com.

FIRE SAFETY CAUTION Passing a fire test in a controlled laboratory setting and/or certifying or labeling a product as having a one-hour, two-hour, or any other fire resistance or protection rating and, therefore, as acceptable for use in certain fire rated assemblies/systems, does not mean that either a particular assembly/system incorporating the product, or any given piece of the product itself, will necessarily provide one-hour fire resistance, two-hour fire resistance, or any other specified fire resistance or protection in an actual fire. In the event of an actual fire, you should immediately take any and all actions necessary for your safety and the safety of others without regard for any fire rating of any product or assembly/system.

