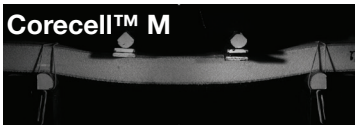
Core Slamming Performance - Dynamic Testing Results

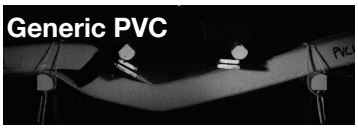
Gurit has embarked with an independent research institute, the University of Auckland's Center for Advanced Composite Materials, on a detailed investigation of the impact resistance of foam cores.
It was found that strength and elongation, the two properties currently used to select and design cores for the slamming area of a hull, are not representative of the ability of the core to survive a slamming impact. Instead, a test method has been developed in order to be able to measure the most relevant property for slamming; Dynamic Energy Absorption

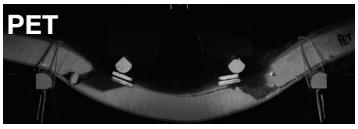
The results validate a truth long known in the marine industry: even if on datasheets the strength and elongation of PVC, and even PET, match these of M-foam, in a real impact, Gurit Corecell™ M-foam is able to absorb much more energy.

Gurit Corecell™ M-foam, The marine foam with unmatched toughness, for slamming applications.

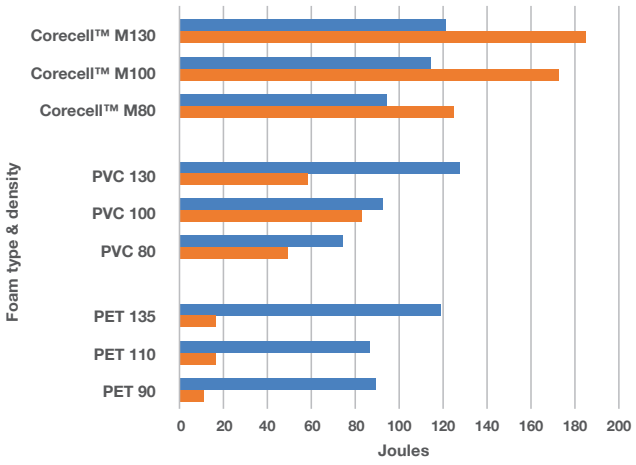
Energy absorption impact test results: Corecell™, generic PVC, PET foam





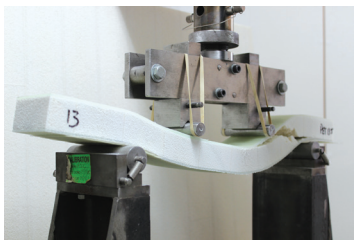


	mm/min
STATIC	6
DYNAMIC	210,000



- Corecell™ M, PVC and PET have similar static energy absorption;
- **Corecell™ M has superior performance when loaded dynamically / in an impact:**
- Corecell™ M energy absorption increases when loaded dynamically
- PVC & PET energy absorption decreases when loaded dynamically
- Corecell™ M has more than **2 x the dynamic energy** absorption of PVC foam
- Corecell™ M has more than **10 x the dynamic energy** absorption of PET foam

Energy absorption impact test methods:



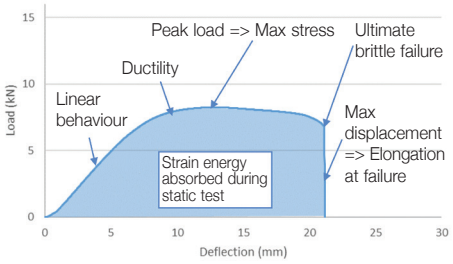
THE UNIVERSITY OF AUCKLAND
NEW ZEALAND

Centre for Advanced Composite Materials

Static

Low speed industry standard

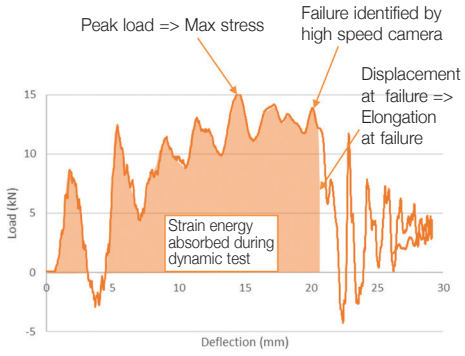
Test Standard:	ASTM C393
Test machine:	Instron Universal Testing Machine 3360
Drop height:	N/A
Drop mass:	N/A
Velocity:	6mm/min (0.0001m/s)
Energy range:	N/A
Peak force:	50kN
Data acquisition:	10 samples/second



Dynamic

High speed advanced drop tower test

Test Standard:	Custom
Test machine:	Imatek Fully Instrumented Drop Weight Impact Tester IM10-20
Drop height:	50-2000mm
Drop mass:	8-44kg, 1.0kg increments
Velocity:	1.0-20m/s
Energy range:	2.5 - 2000j
Peak force:	60kN
Data acquisition:	Up to 3,000,000/ second



For more information please visit www.gurit.com or email: contact@gurit.com