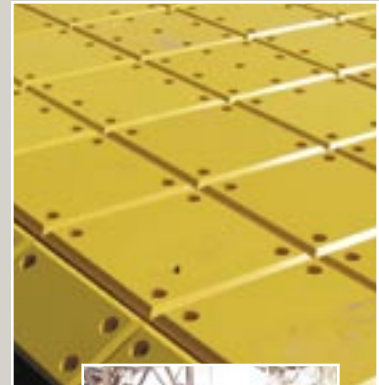
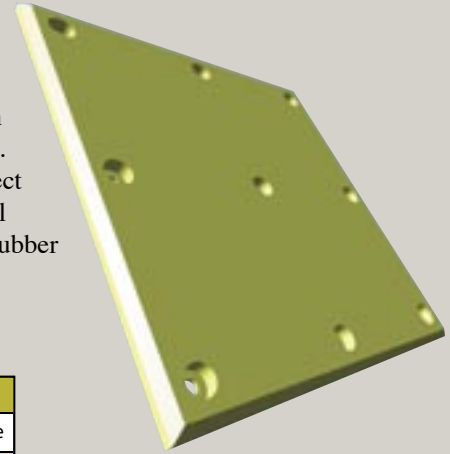


# UHMW & FIXING HARDWARE

## UHMW - PE

### UHMW-PE

Maritime International faces all of its complete fender panel systems with high quality UHMW-PE face pads. The UHMW-PE possesses a low coefficient of friction which provides a smooth sliding surface for the vessel to travel along the fender face. Maritime International's UHMW-PE comes in many colors and thicknesses per project requirements and also can be provided in a re-processed grade for a more economical solution. UHMW-PE can also be supplied in stand-alone applications not related to rubber fenders, for sliding surfaces that do not require any energy absorption.



PHYSICAL PROPERTIES OF VIRGIN MATERIAL					
Property	Method	SI Unit	SI Value	English Unit	English Value
Density	ASTM D-792	kg/m <sup>3</sup>	930	lbs/ft <sup>3</sup>	58.01
Molecular Weight	Viscosimetric	g/mol	4,200,000	g/mol	4,200,000
Yield Strength	ASTM D-638	MPa	21	psi	3050
Ultimate Strength	ASTM D-638	MPa	40	psi	5800
Elongation at Break	ASTM D-638	%	250	%	250
Izod Impact	ASTM D-4020	kJ/m <sup>2</sup>	70	ft-lbs/in <sup>2</sup>	34
Tensile Impact	DIN 53448	kJ/m <sup>2</sup>	2200	ft-lbs/in <sup>2</sup>	1050
Sand Wheel Wear	ASTM G-65	AR-01 Steel=100	90	AR-01 Steel=100	90
Hardness	ASTM D-2240	Type D	68	Type D	68
Static Friction	ASTM D-1894	Unitless	.15	Unitless	.15
Dynamic Friction	ASTM D-1894	Unitless	.12	Unitless	.12
Coefficient of Thermal Exp.	ASTM D-696	°C <sup>-1</sup>	0.0002	°F <sup>-1</sup>	0.00011
Melting Point	ASTM D-3417	°C	137-143	°F	278-289
Water Absorption	ASTM D-570	%	nil	%	nil

PHYSICAL PROPERTIES OF REPROCESSED MATERIAL					
Property	Method	SI Unit	SI Value	English Unit	English Value
Density	ASTM D-792	kg/m <sup>3</sup>	945	lbs/ft <sup>3</sup>	58.9
Molecular Weight	Viscosimetric	g/mol	4,200,000	g/mol	4,200,000
Yield Strength	ASTM D-638	MPa	20	psi	2900
Ultimate Strength	ASTM D-638	MPa	34.3	psi	4974
Elongation at Break	ASTM D-638	%	218	%	218
Izod Impact	ASTM D-4020	kJ/m <sup>2</sup>	50	ft-lbs/in <sup>2</sup>	24
Tensile Impact	DIN 53448	kJ/m <sup>2</sup>	1600	ft-lbs/in <sup>2</sup>	762
Sand Wheel Wear	ASTM G-65	Virgin=100	116	Virgin=100	116
Hardness	ASTM D-2240	Type D	70	Type D	70
Static Friction	ASTM D-1894	Unitless	.15 - .20	Unitless	.15 - .20
Dynamic Friction	ASTM D-1894	Unitless	.14 - .16	Unitless	.14 - .16
Coefficient of Thermal Exp.	ASTM D-696	°C <sup>-1</sup>	0.00018	°F <sup>-1</sup>	0.00011
Melting Point	ASTM D-3417	°C	137-143	°F	278-289
Water Absorption	ASTM D-570	%	nil	%	nil

\* Values are averages and are not specifications.

\*\* ASTM test methods are under current procedures.

Material indicated herein is Maritime International's typical UHMW-PE. Other grades are available upon request.