

Attention: LLDPE Manufacturing Pte Ltd.

Lab Result: MAC201603.0175

Energy lives here™

Keith Pey

Application Technologist

8 Jun 2016

Legend:

	Layer Distri	MAC-124440	MAC-124441	MAC-124442	MAC-124443
Segment		CHW			
Target thickness, um		15	17	21	23
Non-cling, A	15%	100% LLDPE ⁽¹⁾			
Sub-skin, B	15%	100% Enable 20-10CB			
Core, C	40%	40% LLDPE ⁽¹⁾ + 60% Enable 20-10CB			
Sub-skin, D	15%	100% Enable 20-10CB			
Cling, E	15%	95% LLDPE ⁽¹⁾ + 5% VM6202			
Remarks:		Produced during joint trial	Produced offline by Serve Marine	Produced during joint trial	Produced offline by Serve Marine

	Layer Distri	MAC-124444	MAC-124445	MAC-124446	MAC-124447
Segment		CMW			
Target thickness, um		15	17	21	23
Non-cling, A	15%	100% LLDPE ⁽¹⁾			
Sub-skin, B	15%	75% Exceed 3518CB + 25% Enable 20-10CB			
Core, C	40%	60% LLDPE ⁽¹⁾ + 40% Exceed 3518CB			
Sub-skin, D	15%	75% Exceed 3518CB + 25% Enable 20-10CB			
Cling, E	15%	95% LLDPE ⁽¹⁾ + 5% VM6202			
Remarks:		Produced offline by Serve Marine			

(1): cast grade, 2.0MI, 0.918g/cm³, barefoot

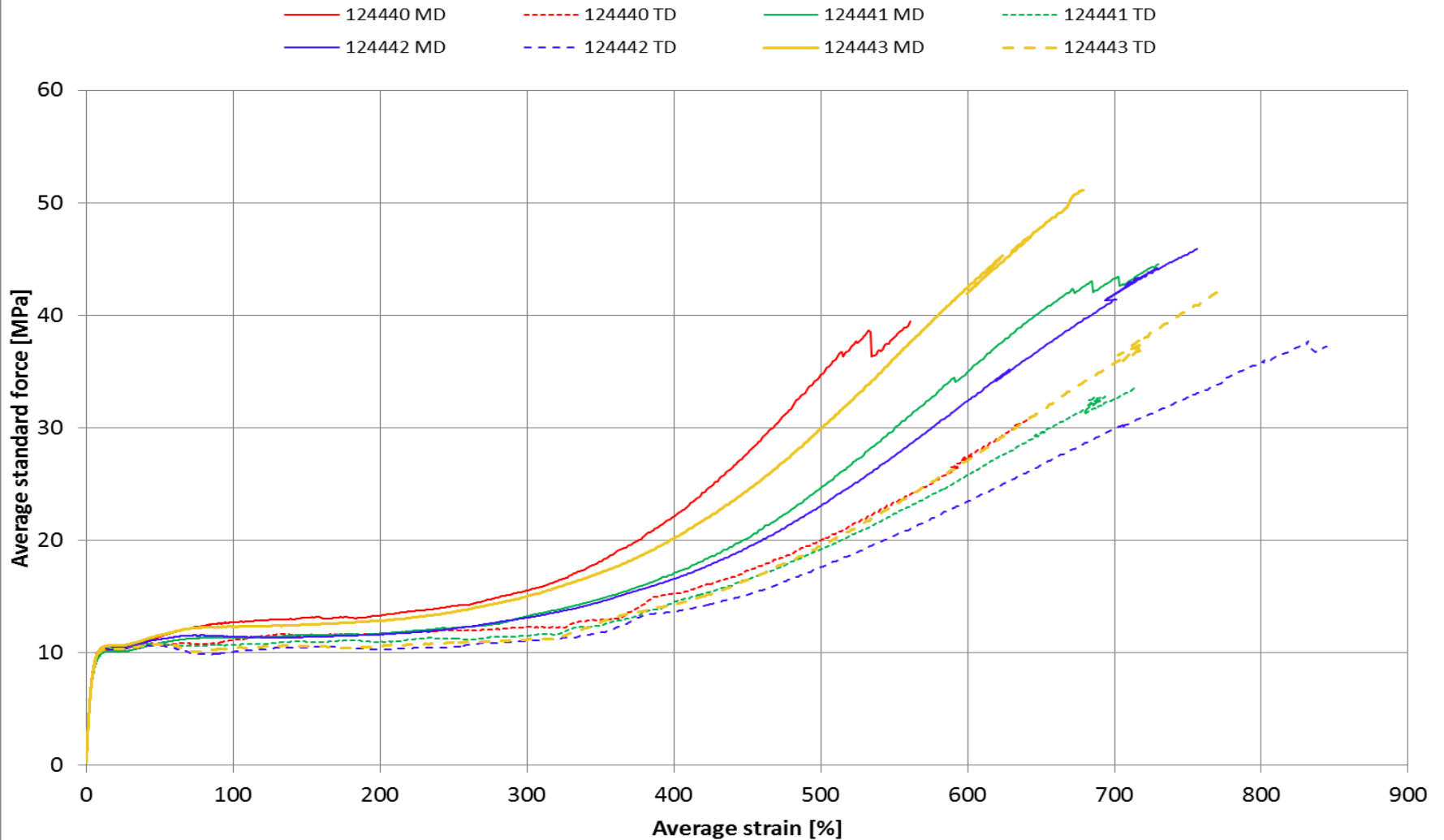
© 2016 ExxonMobil. Use of this information is limited to the specified recipient. While the information is accurate to the best of our knowledge and belief as of the date compiled, it is limited to the information as specified. No representation or warranty, expressed or implied, is made regarding the information, or its completeness, merchantability, or fitness for a particular use. The user is solely responsible for all determinations regarding use and we disclaim liability for any loss or damage that may occur from the use of this information. WOMS MAC2016.0175-01. Test methods used are mentioned in the above.

Mechanical Performance

Test			Unit	Test Method (based on)	MAC-124440	MAC-124441	MAC-124442	MAC-124443	MAC-124444	MAC-124445	MAC-124446	MAC-124447	
Sample description					CHW (joint trial)	CHW (offline)	CHW (offline)	CHW (joint trial)	CMW (offline)	CMW (offline)	CMW (offline)	CMW (offline)	
Thickness	Target		µm		15.0	17.0	21.0	23.0	15.0	17.0	21.0	23.0	
	Off line thickness measurement	Average thickness		µm	ExxonMobil Method	12	18	23	21	14	17	21	24
		Deviation		%		10	16	11	7	13	16	9	10
	%			11		13	7	6	14	17	13	8	
				ASTM D-882		12	18	22	21	15	18	21	23
		Tensile at break	Mpa		38	44	44	16	43	29	32	46	
		Elongation at break	%		525	693	703	665	625	531	574	706	
		MD 1% mod	. Mpa		187	191	202	203	191	194	190	195	
		Energy to break	mJ/mm3		97	135	136	145	115	78	90	139	
		Natural draw ratio	%		352	392	399	379	404	376	386	416	
		Strain hardening factor	Mpa		13	11	10	13	14	10	10	12	
		Force at NDR	Mpa		18	17	16	18	18	16	16	17	
VIF Tensile properties		Thickness um			um	12	18	23	21	15	17	21	25
		Tensile at break Mpa			Mpa	30	34	36	11	37	37	38	43
		Elongation at break %			%	636	707	802	690	655	668	686	768
		TD 1% mod. Mpa	. Mpa		208	209	207	206	200	198	197	194	
		Energy to break mJ/mm3	mJ/mm3		98	116	140	114	110	113	117	143	
		Natural draw ratio	%		395	399	400	407	398	402	411	403	
		Strain hardening factor Mpa	Mpa		7	7	6	8	10	10	9	9	
		Force at NDR	Mpa		15	14	14	15	16	15	15	15	

© 2016 ExxonMobil. Use of this information is limited to the specified recipient. While the information is accurate to the best of our knowledge and belief as of the date compiled, it is limited to the information as specified. No representation or warranty, expressed or implied, is made regarding the information, or its completeness, merchantability, or fitness for a particular use. The user is solely responsible for all determinations regarding use and we disclaim liability for any loss or damage that may occur from the use of this information. WOMS MAC2016.0175-01. Test methods used are mentioned in the above.

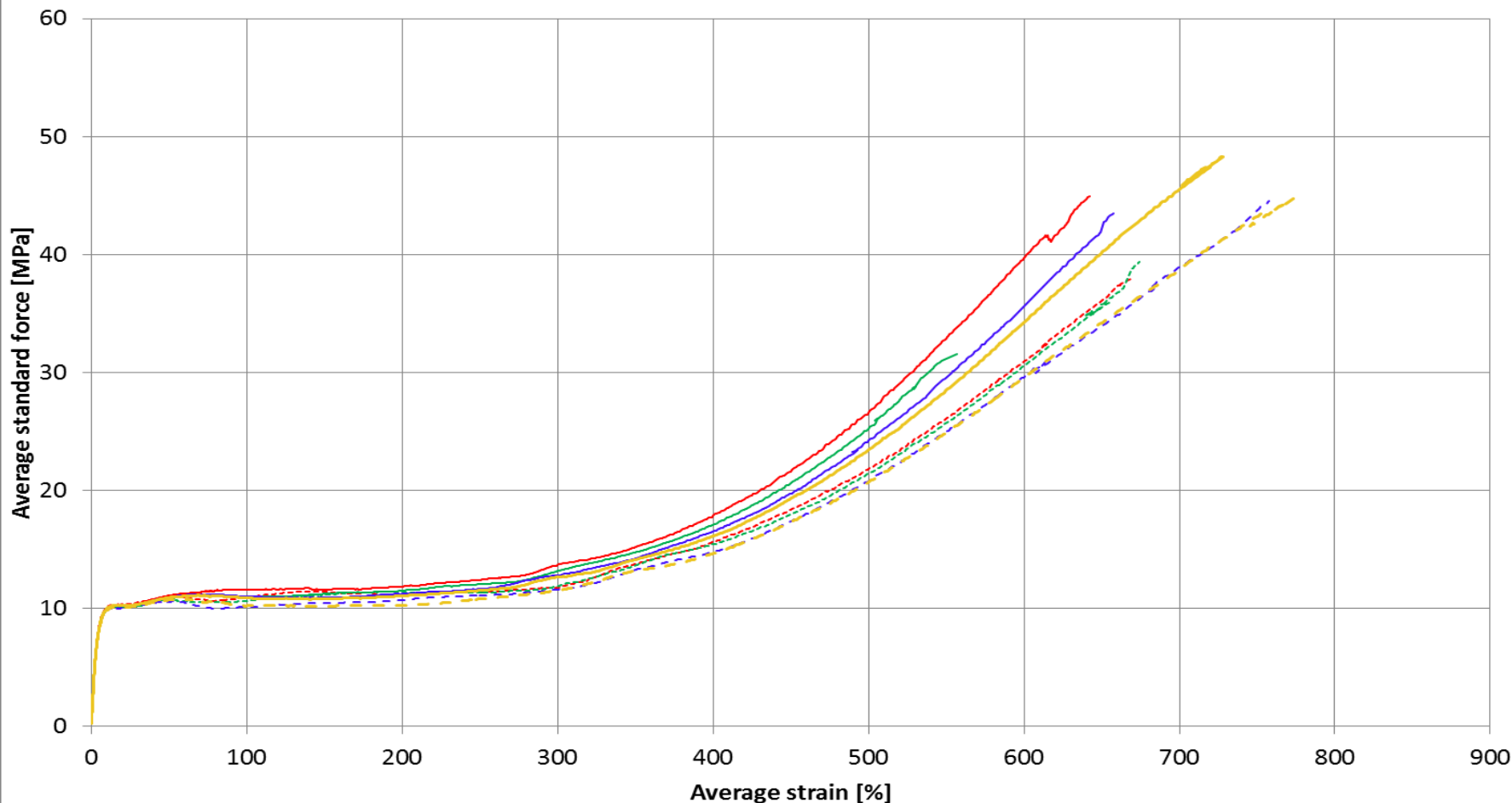
Cast Hand Wraps



© 2016 ExxonMobil. Use of this information is limited to the specified recipient. While the information is accurate to the best of our knowledge and belief as of the date compiled, it is limited to the information as specified. No representation or warranty, expressed or implied, is made regarding the information, or its completeness, merchantability, or fitness for a particular use. The user is solely responsible for all determinations regarding use and we disclaim liability for any loss or damage that may occur from the use of this information. WOMS MAC2016.0175-01. Test methods used are mentioned in the above.

Cast Machine Wraps

— 124444 MD - - - 124444 TD — 124445 MD - - - 124445 TD
— 124446 MD - - - 124446 TD — 124447 MD - - - 124447 TD



© 2016 ExxonMobil. Use of this information is limited to the specified recipient. While the information is accurate to the best of our knowledge and belief as of the date compiled, it is limited to the information as specified. No representation or warranty, expressed or implied, is made regarding the information, or its completeness, merchantability, or fitness for a particular use. The user is solely responsible for all determinations regarding use and we disclaim liability for any loss or damage that may occur from the use of this information. WOMS MAC2016.0175-01. Test methods used are mentioned in the above.