

# Wear analysis of liner and piston rings



Name: Vessel 1  
 IMO:  
 Date:

Engine type: 6S70MC  
 Engine ID: :-)  
 Running hours: 43.081

# piston rings: 4  
 liner D [mm]: 700

Cylinder Unit ID	1	2	3	4	5	6	7	8	9	10	11	12
R-hrs	43.081	43.081	43.081	43.081	12.000	43.081						
LINER DATA	Direction	liner wear [mm]										
	0°	1,37	1,11	1,42	1,13	0,29	1,06					
	90°	2,03	1,92	2,30	1,72	0,58	1,99					
	180°	1,38	1,08	1,41	1,10	0,25	1,16					
	270°	2,16	2,08	2,48	1,83	0,58	2,13					
	F-A	2,75	2,20	2,83	2,23	0,54	2,22					
	E-M	4,19	4,00	4,78	3,55	1,16	4,12					
	Ovality	-1,44	-1,80	-1,95	-1,32	-0,62	-1,90					
		Wear rate [mm/1000 hrs] - Lifetime in Rhrs										
	W-Rate	0,081	0,072	0,088	0,067	0,071	0,074					
Lifetime	26.000	35.000	20.000	40.000	67.000	33.000						
RING DATA	Position	coating thickness [µm]										
	T	0	3	4	3	0	3					
	MT	2	125	5	5	0	1					
	MB	4	140	6	3	0	4					
	B	1	220	7	4	0	1					

Recommended liner limits & colour code			
Max wear [0,8% D]	5,60	mm	75% of max
Max. ovality [0,1% D]	0,7	mm	
High wear rate warning	0,187	mm per 1000Rhrs	
Low wear rate warning	0,037	mm per 1000Rhrs	

Piston ring colour code	
>275µm	like new
100<->275	normal
<100 µm	worn
<12 µm	no coating

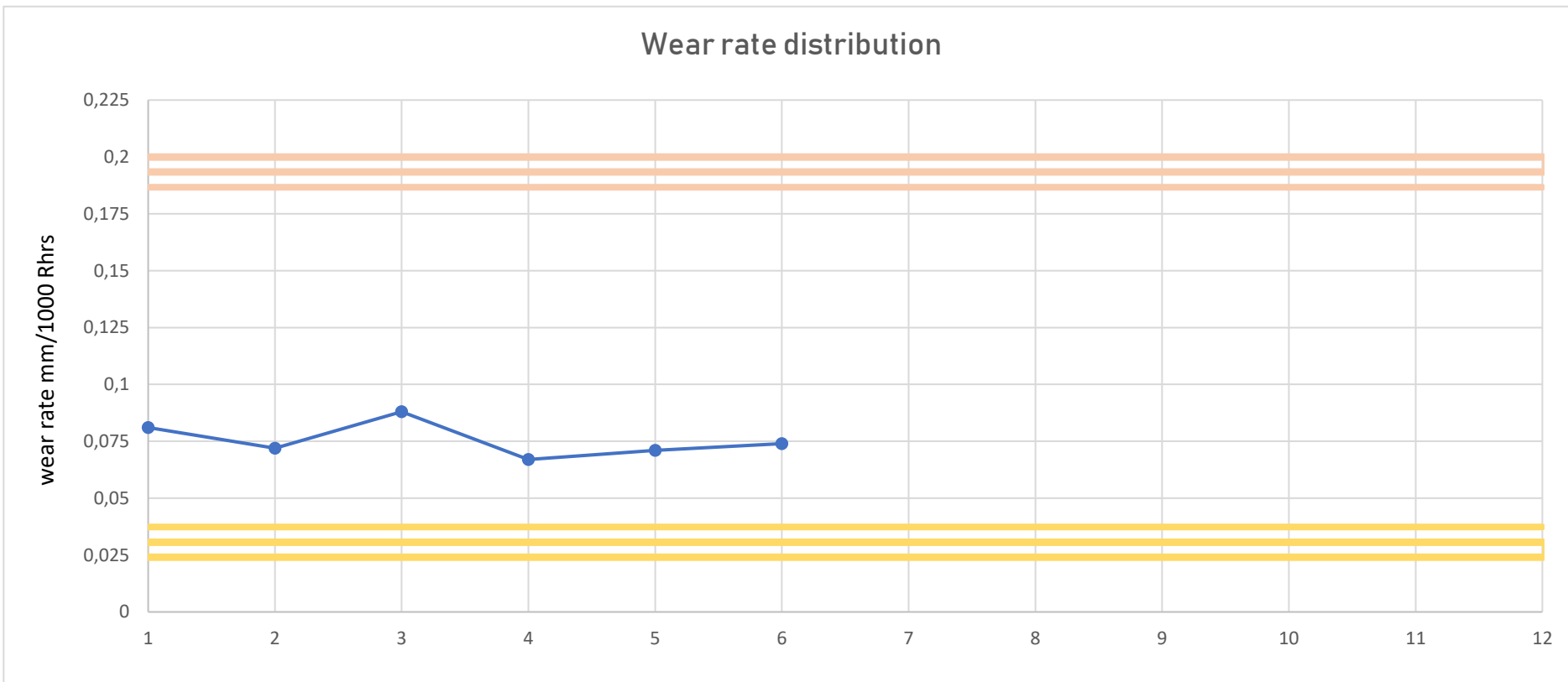
# Wear analysis of liner - distribution



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High wear rate warning **0,187** mm per 1000Rhrs

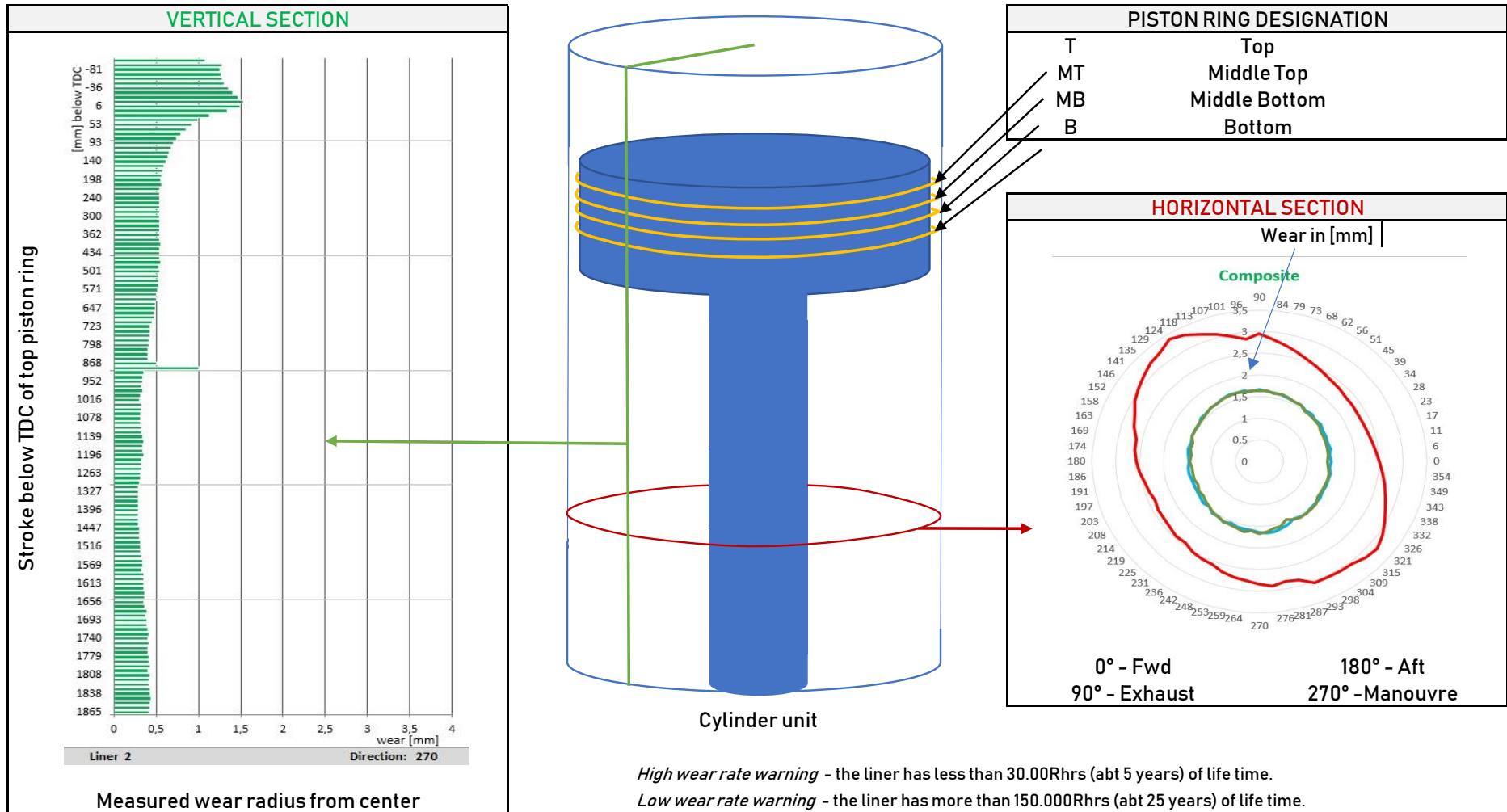
Low wear rate warning **0,037** mm per 1000Rhrs

liner D [mm]: 700

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# Designations

Explanation of abbreviations used in the data sheets.



*High wear rate warning* - the liner has less than 30.00Rhrs (abt 5 years) of life time.  
*Low wear rate warning* - the liner has more than 150.000Rhrs (abt 25 years) of life time.

*Resolution:* All measurements have a resolution of 0.01mm  
*Precision:* All measurements have a statistical error of +/- 0.02mm.

*Temperature compensation:* All measurements are compensated for liner and gauge temperature.

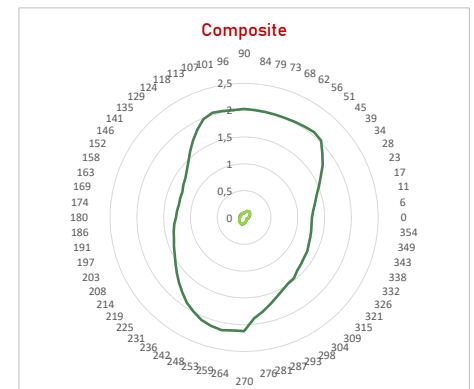
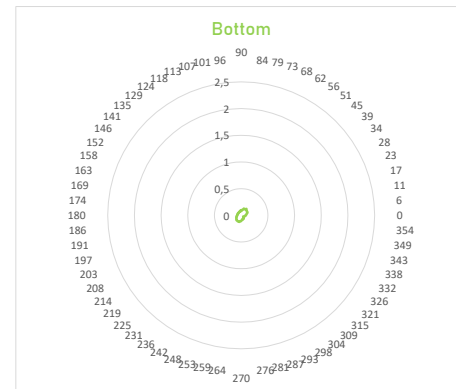
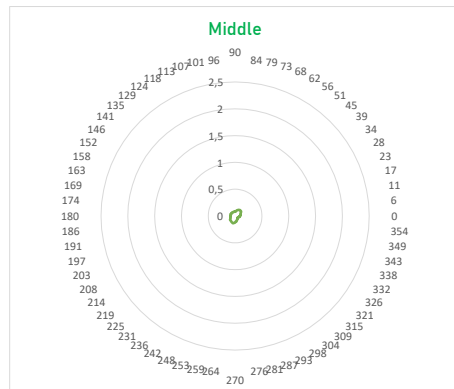
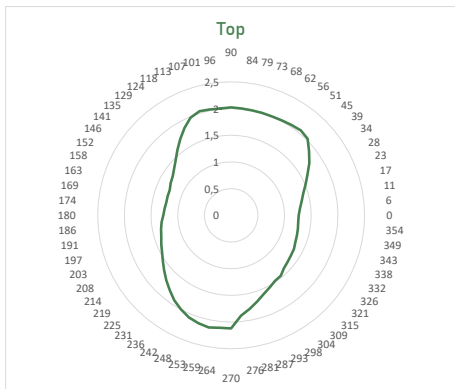
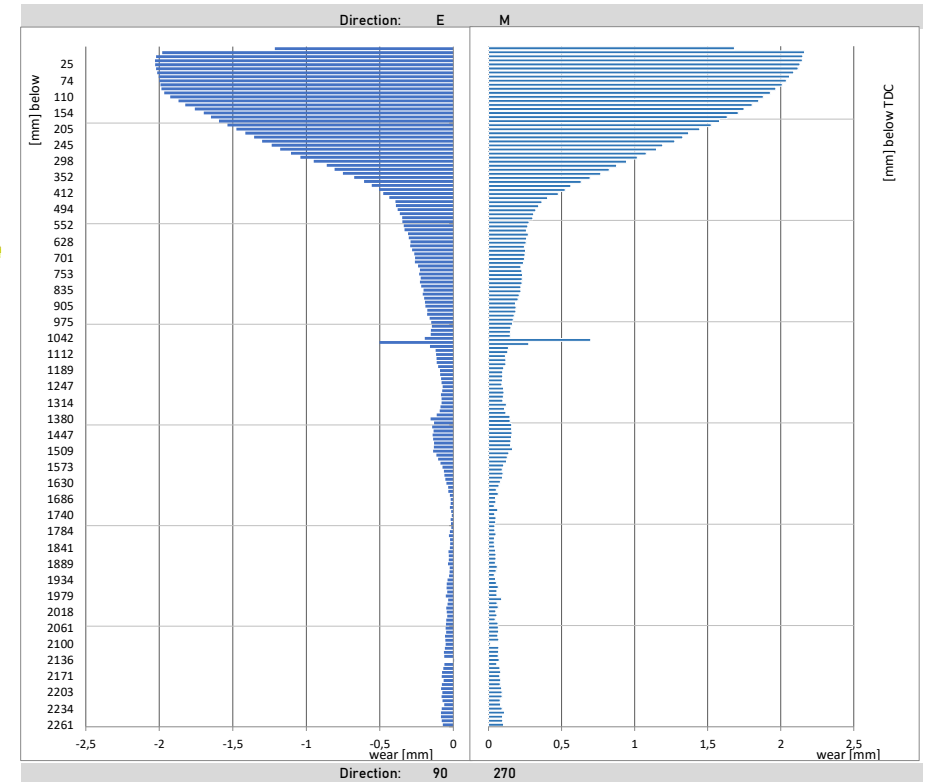
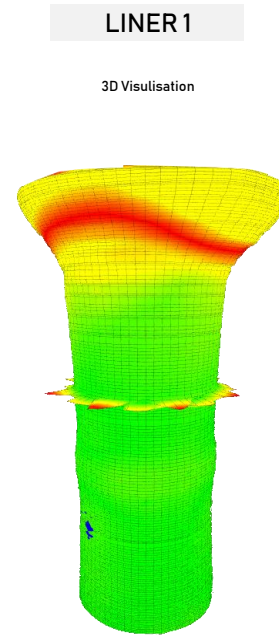
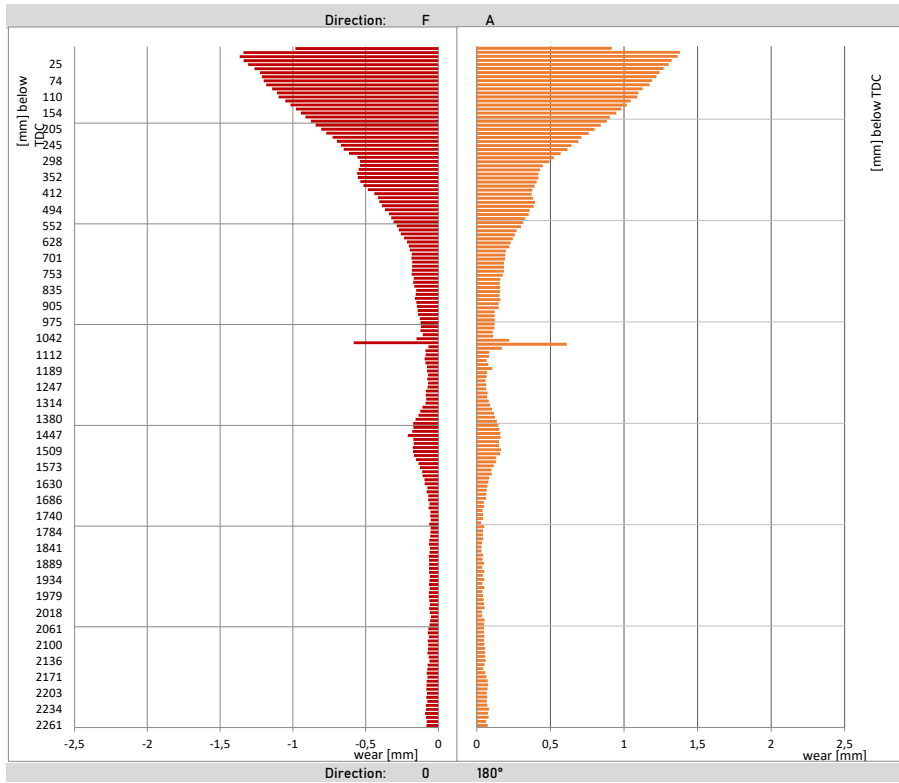
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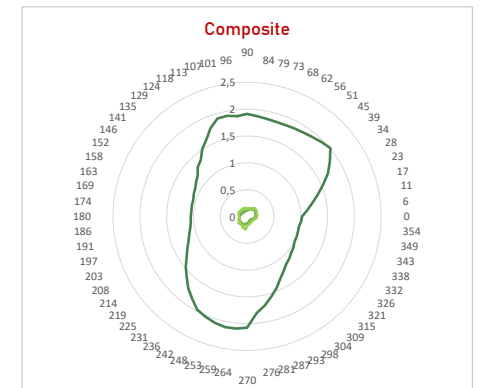
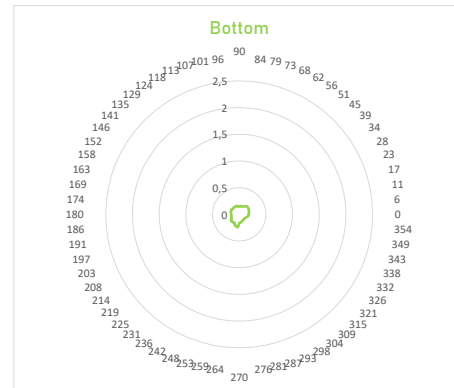
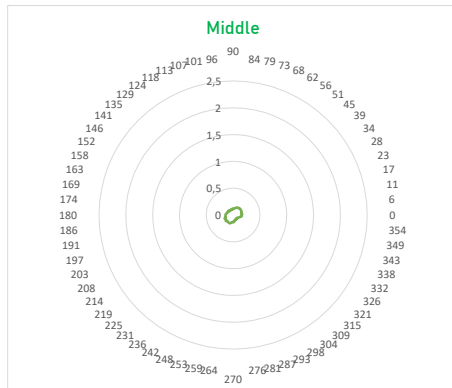
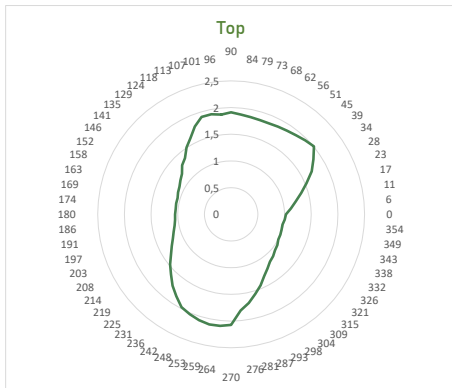
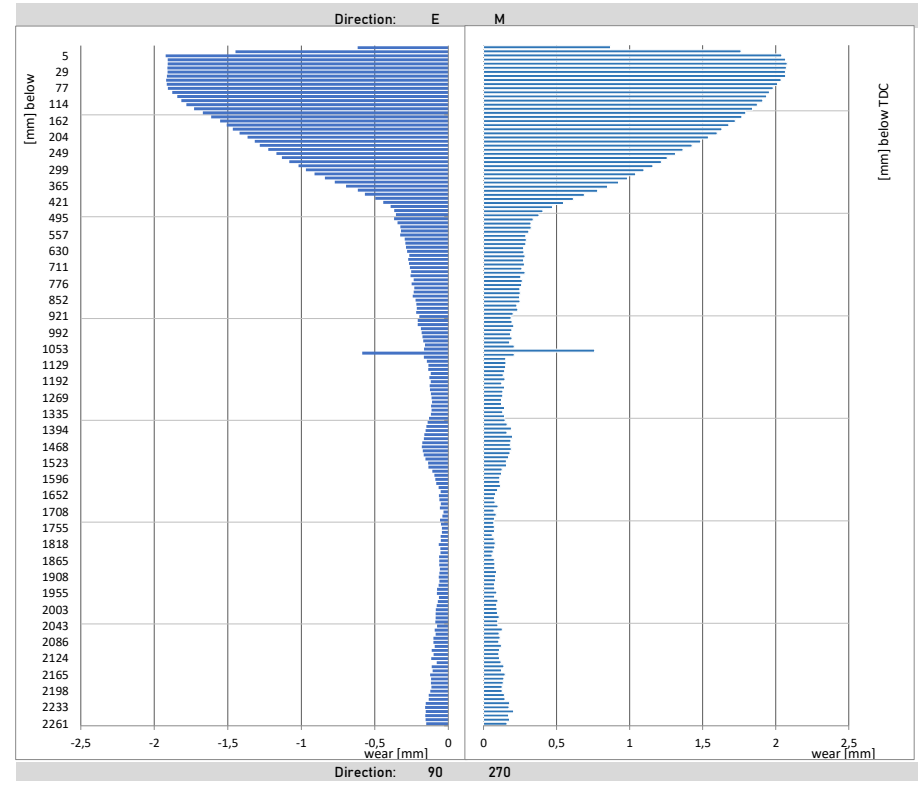
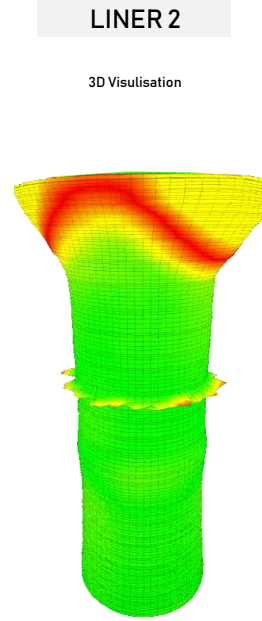
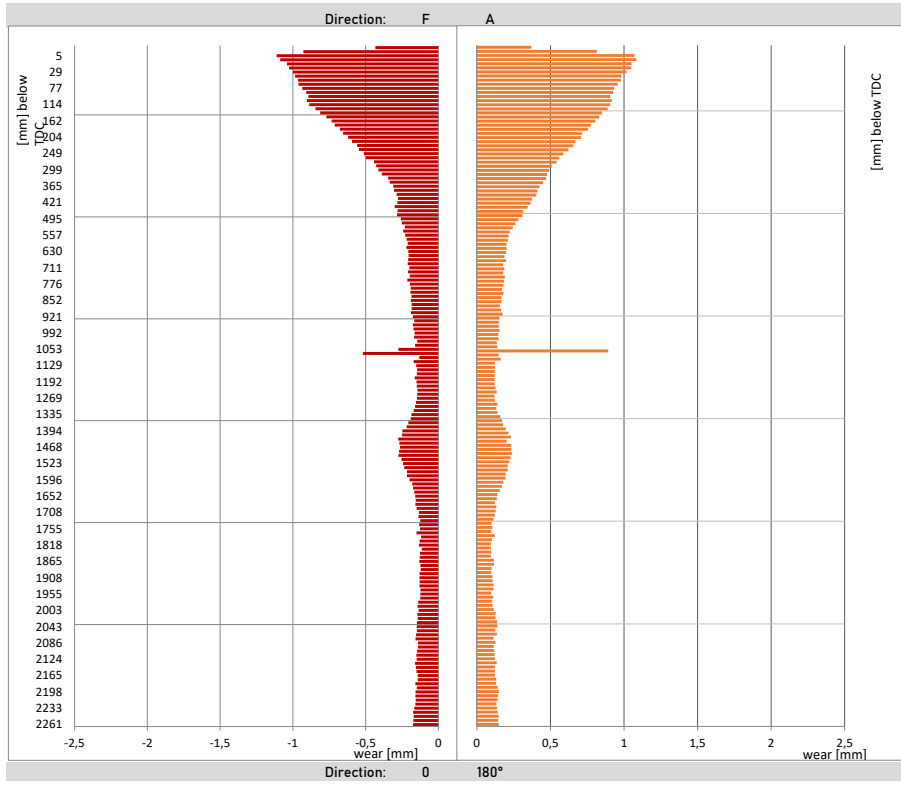
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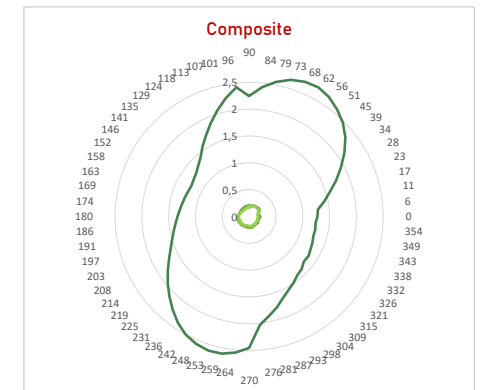
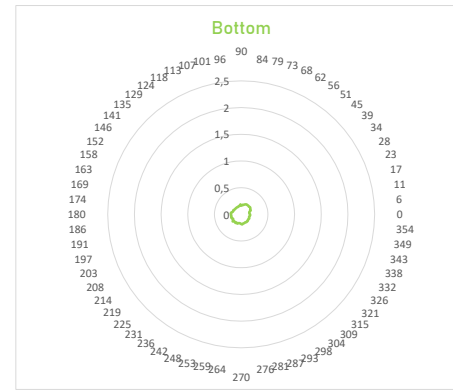
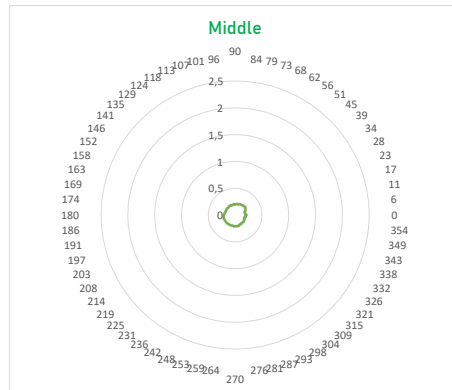
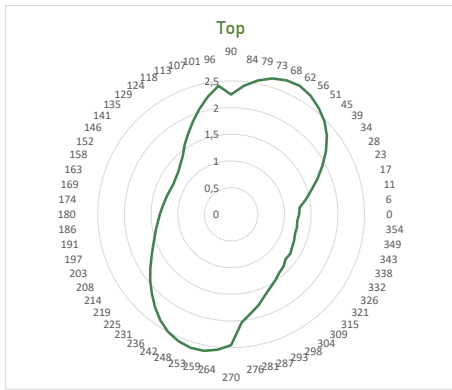
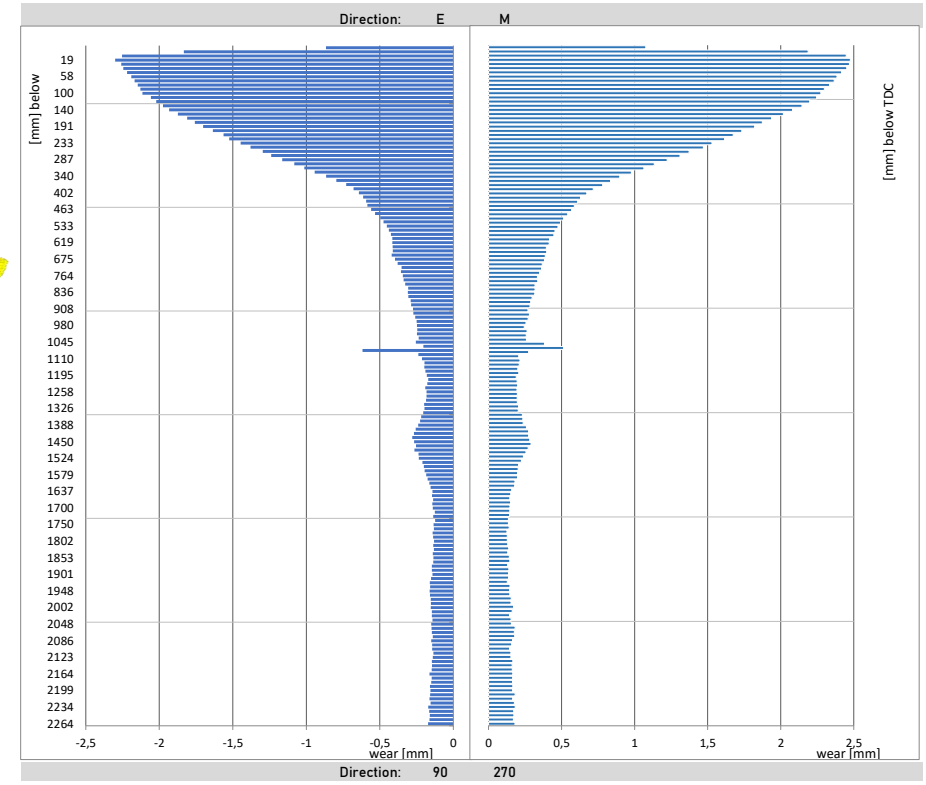
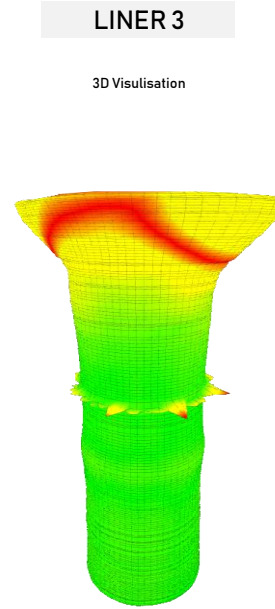
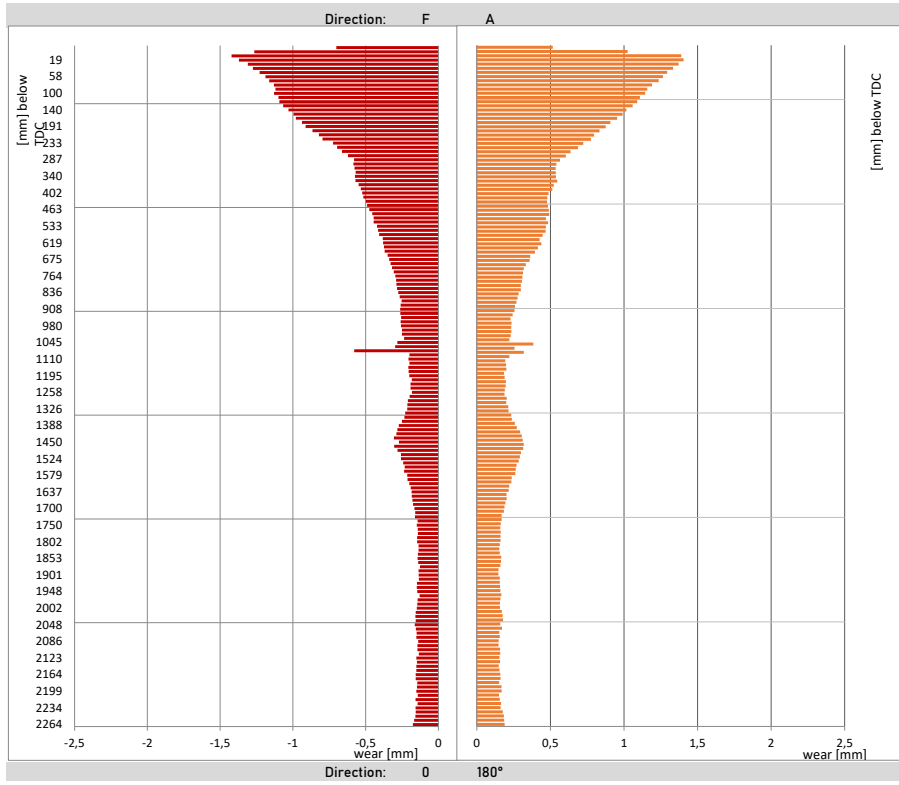
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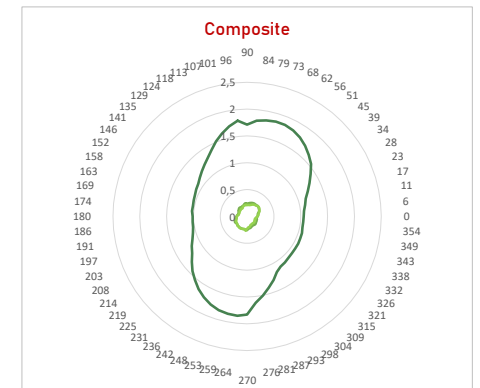
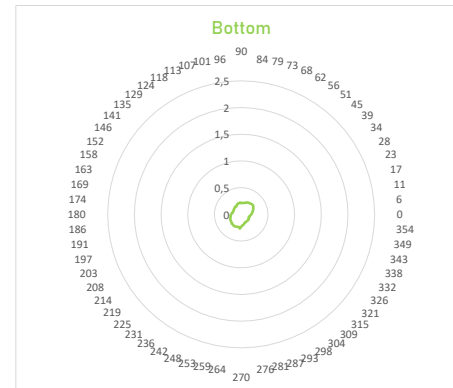
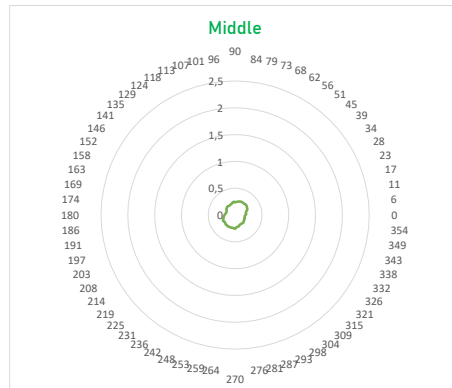
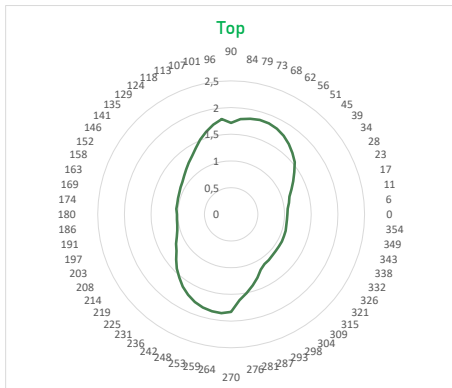
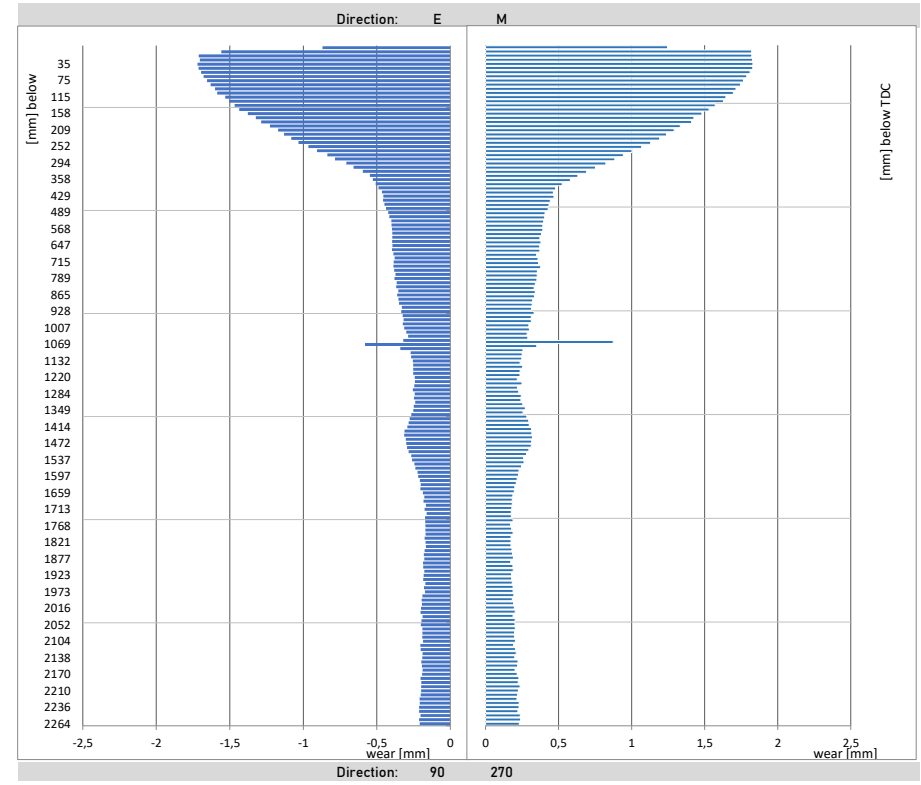
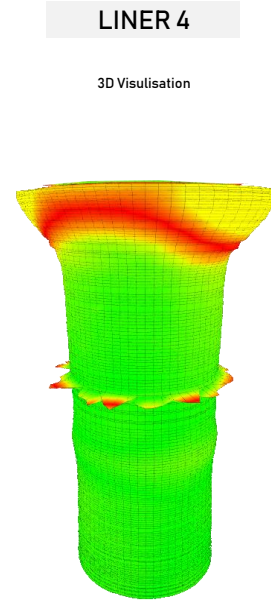
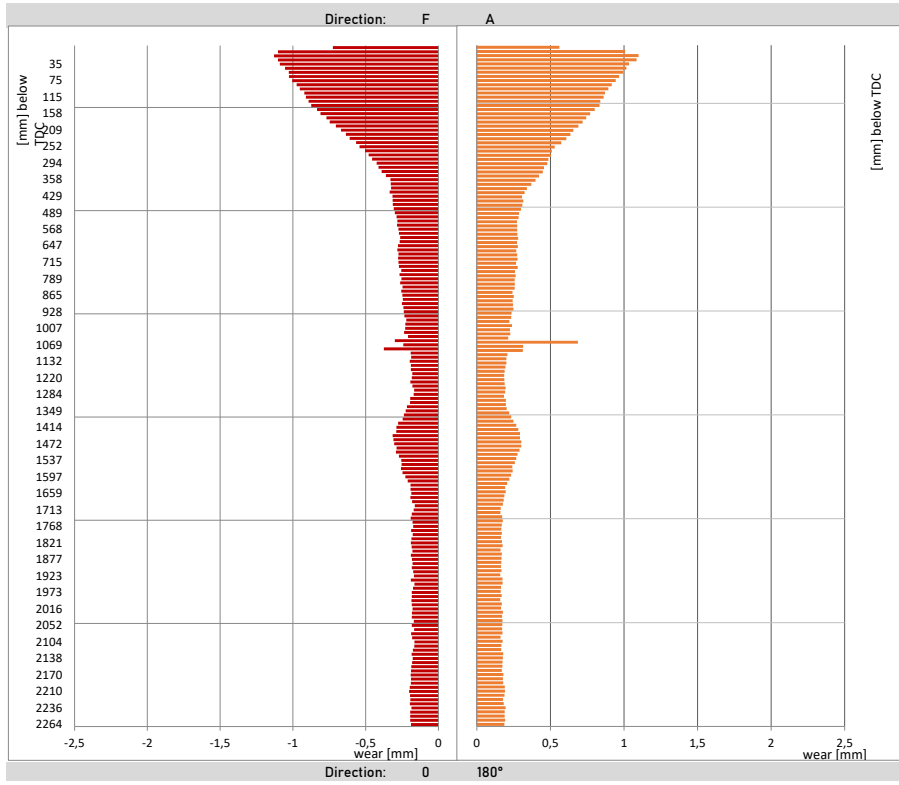
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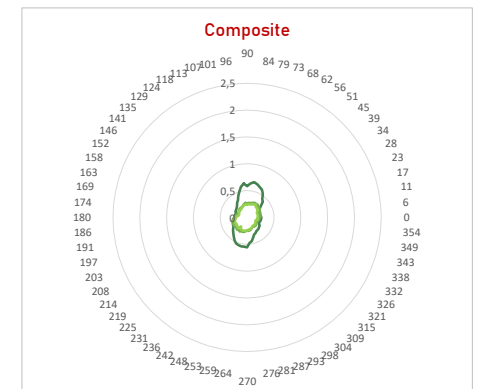
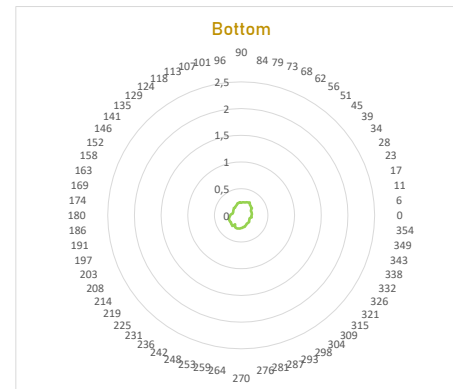
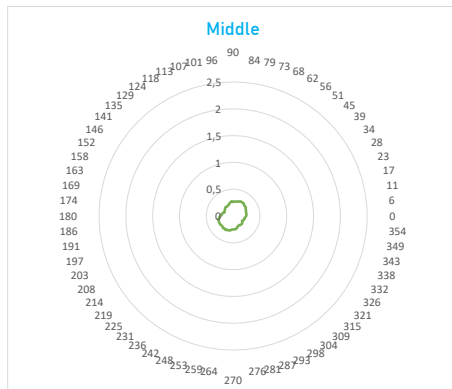
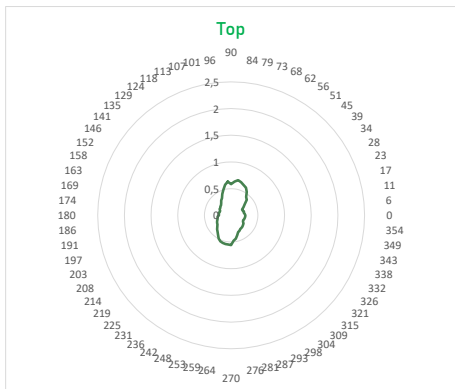
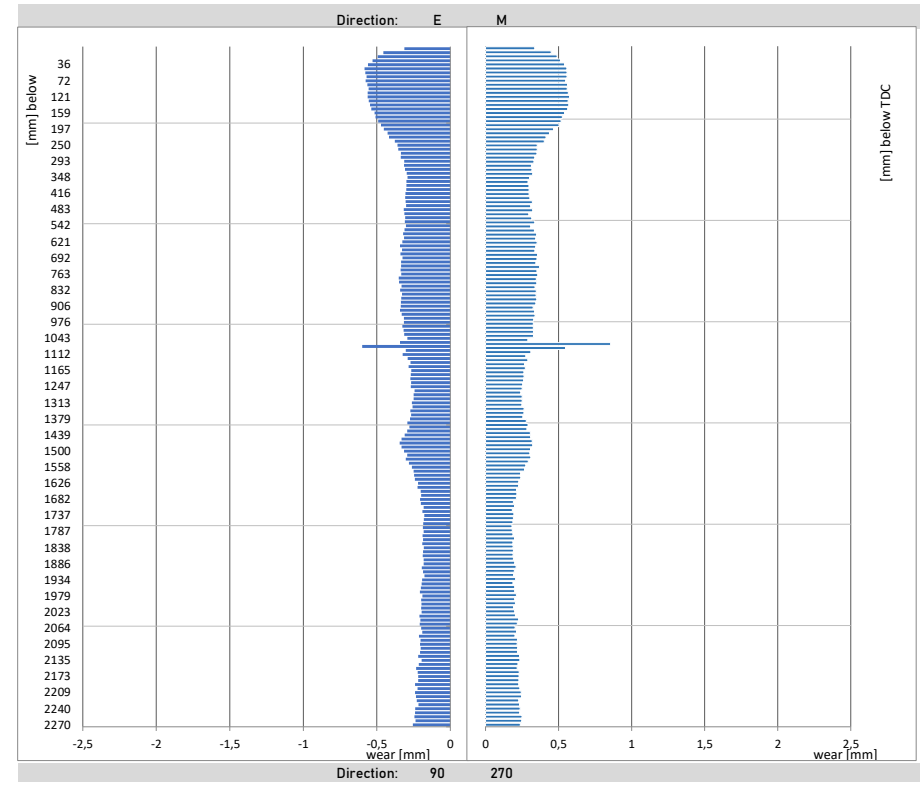
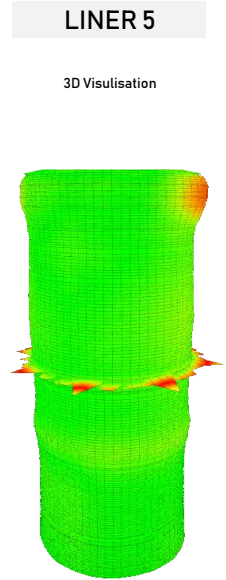
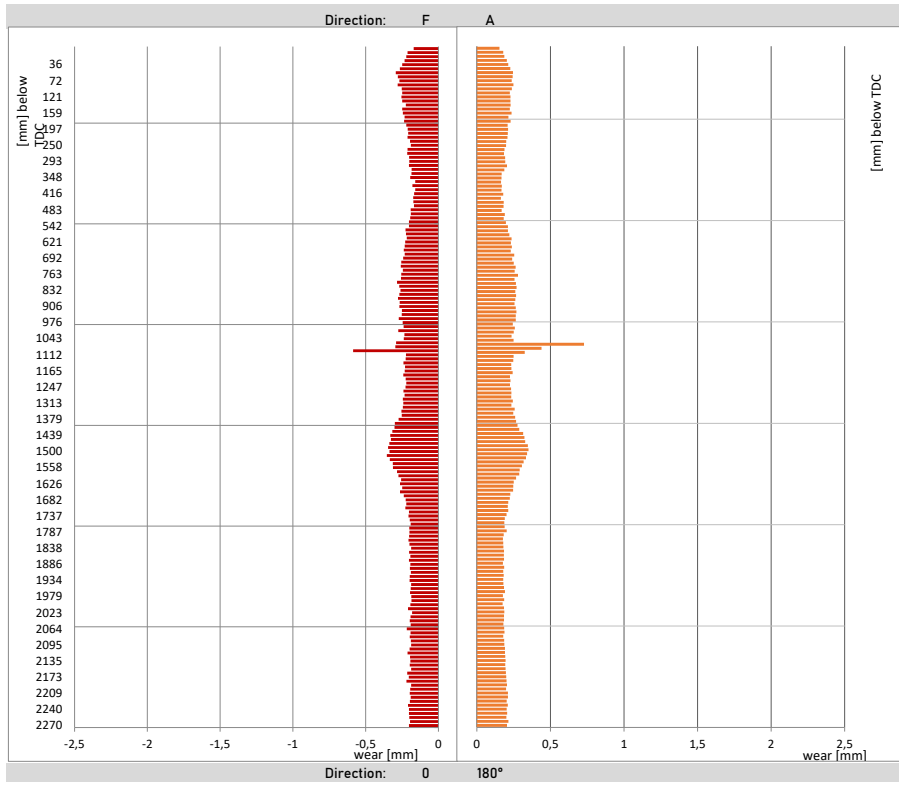
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