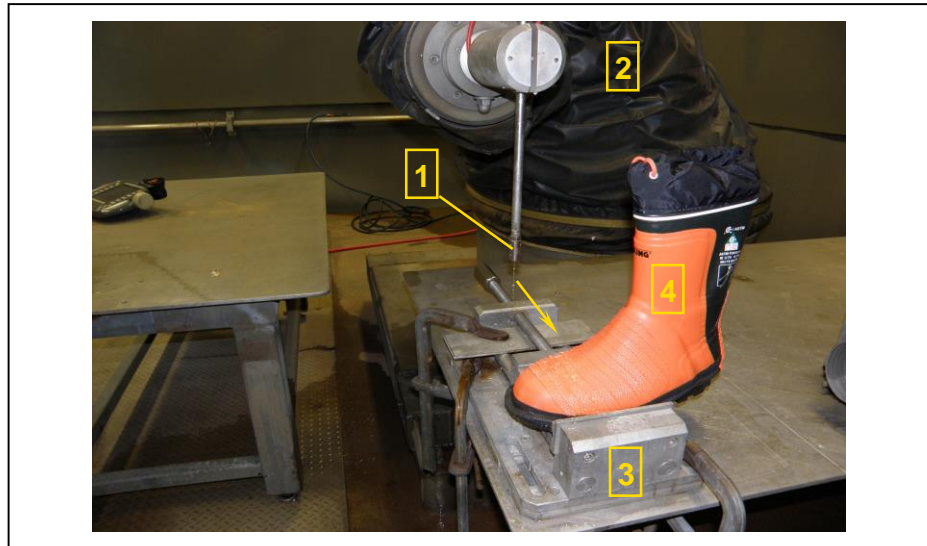


Report number:	VO	913628-01
Purchase order:	KA	218184
Subject:	Protective boots test	
Material:	rubber boots	Amount: 3 Condition: new
Pump:	HDP: 174 \dot{V} [l/min]: 22 p [bar]: 4000	
Accessories:	round jet nozzle type P, rotor jet RD-flex	

Test set up:

Pos. 1:
Tool
Pos. 2:
Robot
Pos. 3:
Parallel vice
Pos. 4:
Test material
Arrow:
Advance direction

**Test procedures:**

In the tests the tool (Pos.1) was guided by a robot (Pos.2) in a straight line across the surface of the test material. The test material (Pos.4) was secured in a parallel vice (Pos.3).

Test sequence:

Run no.1: single round jet nozzle, pressure 3000 bar, **cut** through the boot material

Run no.2: single round jet nozzle, pressure 2500 bar, **cut** through the boot material

Run no.3: single round jet nozzle, pressure 2000 bar, **cut** through the boot material

Run no.4: single round jet nozzle, pressure 1250 bar, **no cut** through the boot material

Run no.5: single round jet nozzle, pressure 1500 bar, **no cut** through the boot material

Run no.6: rotor jet, pressure 3000 bar, **no cut** through the boot material

Run no.7: mono rotor jet, pressure 3000 bar, **cut** through the boot material

Run no.8: mono rotor jet, pressure 2500 bar, **no cut** through the boot material

Run no.9: single round jet nozzle, pressure 1700 bar, **no cut** through the boot material

Conclusion: The tested boots protect against 3000 bar rotor jet, 2500 bar mono rotor jet and 1700 bar single round jet nozzle.

Report number: VO 913628-01
Purchase order: KA 218184



protective rubber
boot type Viking
VW 40



specification of the
boots



single round jet
nozzle, run no. 1-5,9



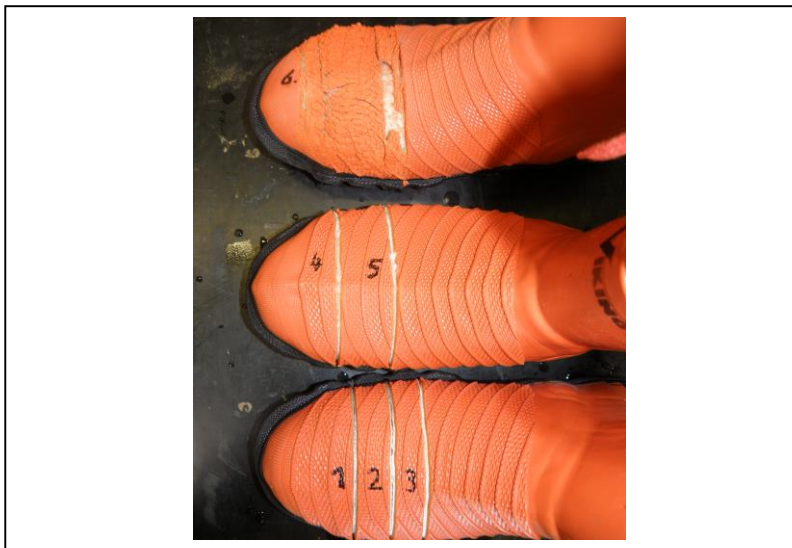
Report number: VO 913628-01
Purchase order: KA 218184

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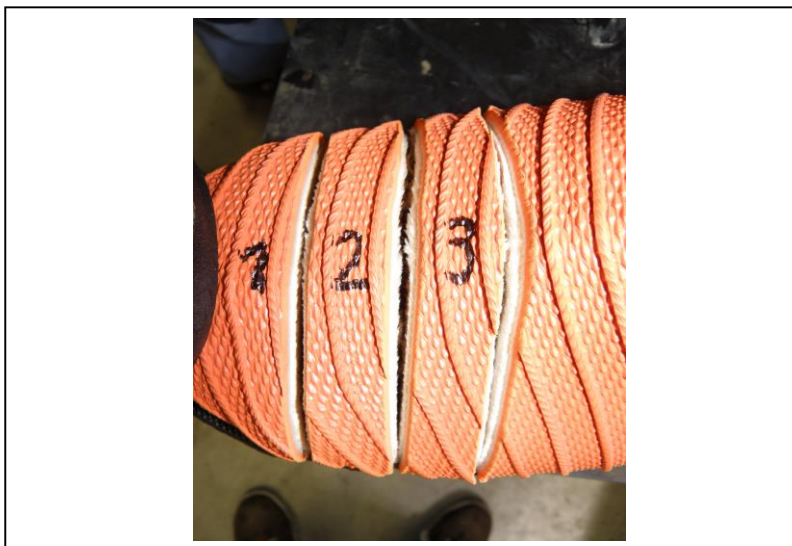
rotor jet, run no.6-8



results run no.1-6



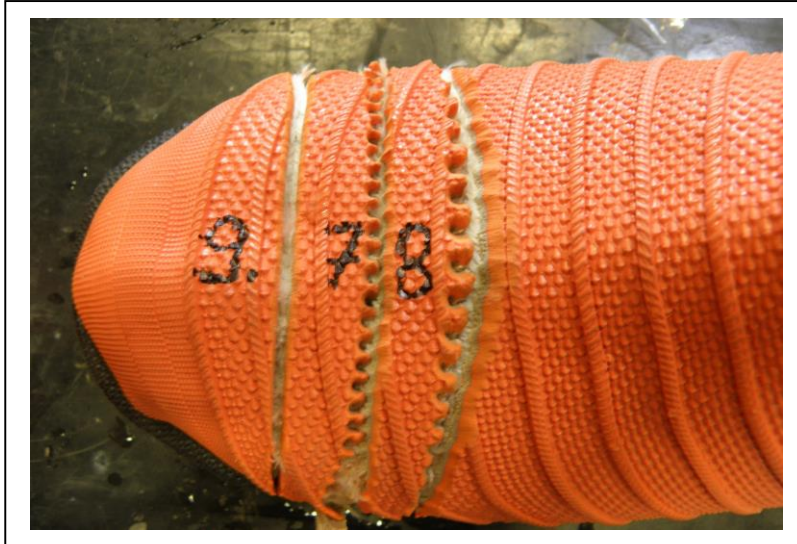
results run no.1-3,
cut through the boot
material



Report number: VO 913628-01
Purchase order: KA 218184



results run no.7-9



Test protocol application engineering

Requested by: Hammeli Oy											Date: 30. August 2016	Report number: VO 913628-01
Pump: HDP: 174 \dot{V} [l/min]: 22 p [bar]: 4000											Test location: Technologie Center, room 2	Purchase order: KA 218184
Accessories: round jet nozzle type P, rotor jet RD-flex											Test Engineer: Mr. S. Lückemeier	Assisted by:
Material: rubber boots											Subject: Protective boots test	
Run. no.	Pressure [bar]	\dot{V} [l/min]	Nozzle			Feed rate [m/s]	React. force [N]	RPM [1/min]	α [°]	Distance [mm]	Result	Comments
			n	\emptyset [mm]	Type							
1	3000	18,3	1	0,85	P	0,2	235	-	90	75	Cut through the boot material	Test-Material: rubber boot "Viking VW 40"
												Art. No. 8944
												Single nozzle type P, nozzle holder 01.01599.0317
2	2500	20,8	1	0,95	P	0,2	243	-	90	75	Cut through the boot material	Test-Material: rubber boot "Viking VW 40"
												Art. No. 8944
												Single nozzle type P, nozzle holder 01.01599.0317
3	2000	20,6	1	1	P	0,2	216	-	90	75	Cut through the boot material	Test-Material: rubber boot "Viking VW 40"
												Art. No. 8944
												Single nozzle type P, nozzle holder 01.01599.0317
4	1250	23,5	1	1,2	P	0,2	194	-	90	75	No cut through the boot material	Test-Material: rubber boot "Viking VW 40"
												Art. No. 8944
												Single nozzle type P, nozzle holder 01.01599.0317
5	1500	21,6	1	1,1	P	0,2	196	-	90	75	No cut through the boot material	Test-Material: rubber boot "Viking VW 40"
												Art. No. 8944
												Single nozzle type P, nozzle holder 01.01599.0317

Test protocol application engineering

Requested by: Hammeli Oy											Date: 30. August 2016	Report number: VO 913628-01
Pump: HDP: 174 \dot{V} [l/min]: 22 p [bar]: 4000											Test location: Technologie Center, room 2	Purchase order: KA 218184
Accessories: round jet nozzle type P, rotor jet RD-flex											Test Engineer: Mr. S. Lückemeier	Assisted by:
Material: rubber boots											Subject: Protective boots test	
Run. no.	Pressure [bar]	\dot{V} [l/min]	Nozzle			Feed rate [m/s]	React. force [N]	RPM [1/min]	α [°]	Distance [mm]	Result	Comments
			n	\emptyset [mm]	Type							
6	3000	18,9	3	0,5	P	0,2	243	~3000	90	75	No cut through the boot material	Test-Material: rubber boot "Viking VW 40"
												Art. No. 8944
												Rotor jet nozzle 00.00786.0080
7	3000	18,3	1	0,85	P	0,2	235	~3000	90	75	Cut through the boot material	Test-Material: rubber boot "Viking VW 40"
												Art. No. 8944
												Rotor jet nozzle RD-flex Mono
8	2500	18,7	1	0,9	P	0,2	218	~3000	90	75	No cut through the boot material	Test-Material: rubber boot "Viking VW 40"
												Art. No. 8944
												Rotor jet nozzle RD-flex Mono
9	1700	19,0	1	1	P	0,2	183	-	90	75	No cut through the boot material	Test-Material: rubber boot "Viking VW 40"
												Art. No. 8944
												Single nozzle type P, nozzle holder 01.01599.0317