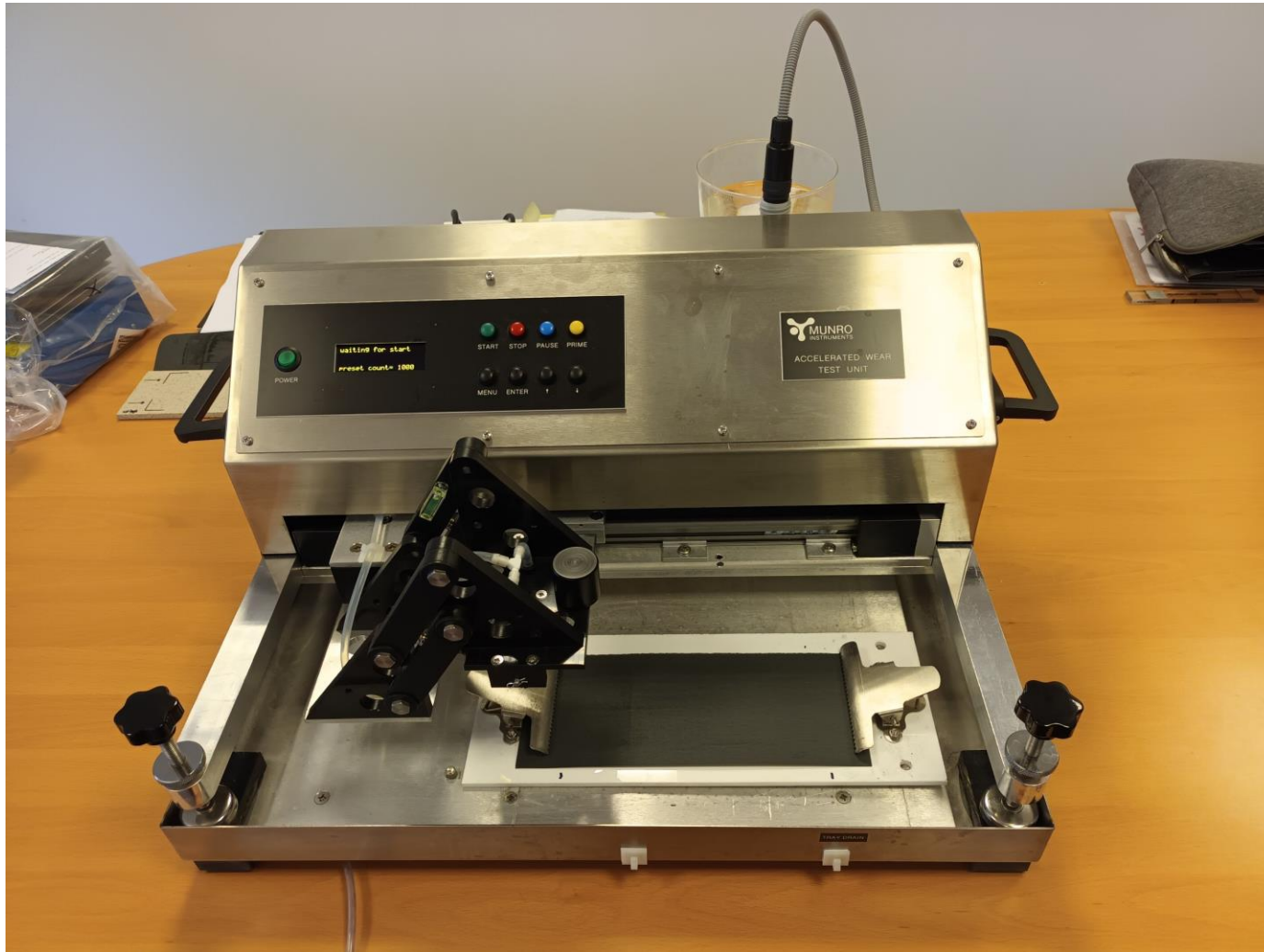


Accelerated Wear

A New Machine

Steve Thorpe and Steven Rawden – Olver & Rawden

Ben Powers and John Adams – Munro Instruments



Parameters

Head assembly 1 kg

1 stroke per second
3600 per hour 86400 per day

Select strokes - cumulative
counter - with pause option

Max sample size 500 x 500
Adjustable for thickness

Level with adjustable feet
and integrated spirit level



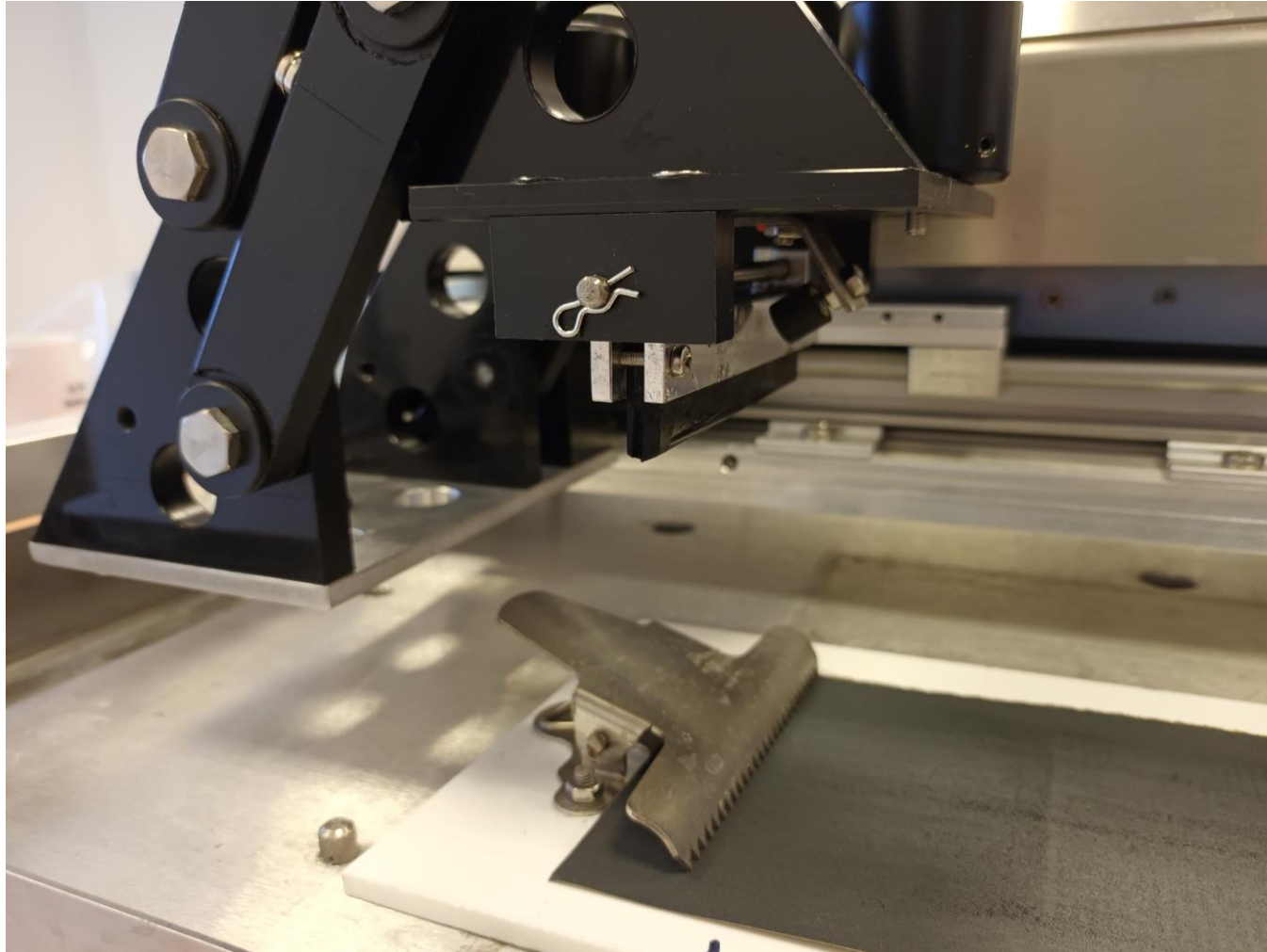
Oversize samples

Use on installed floors

Help to understand
relationship between
wear test and in-service
performance

In-situ floors

Need to contain water!



Wear is by Slider 96 rubber

100 mm slider length

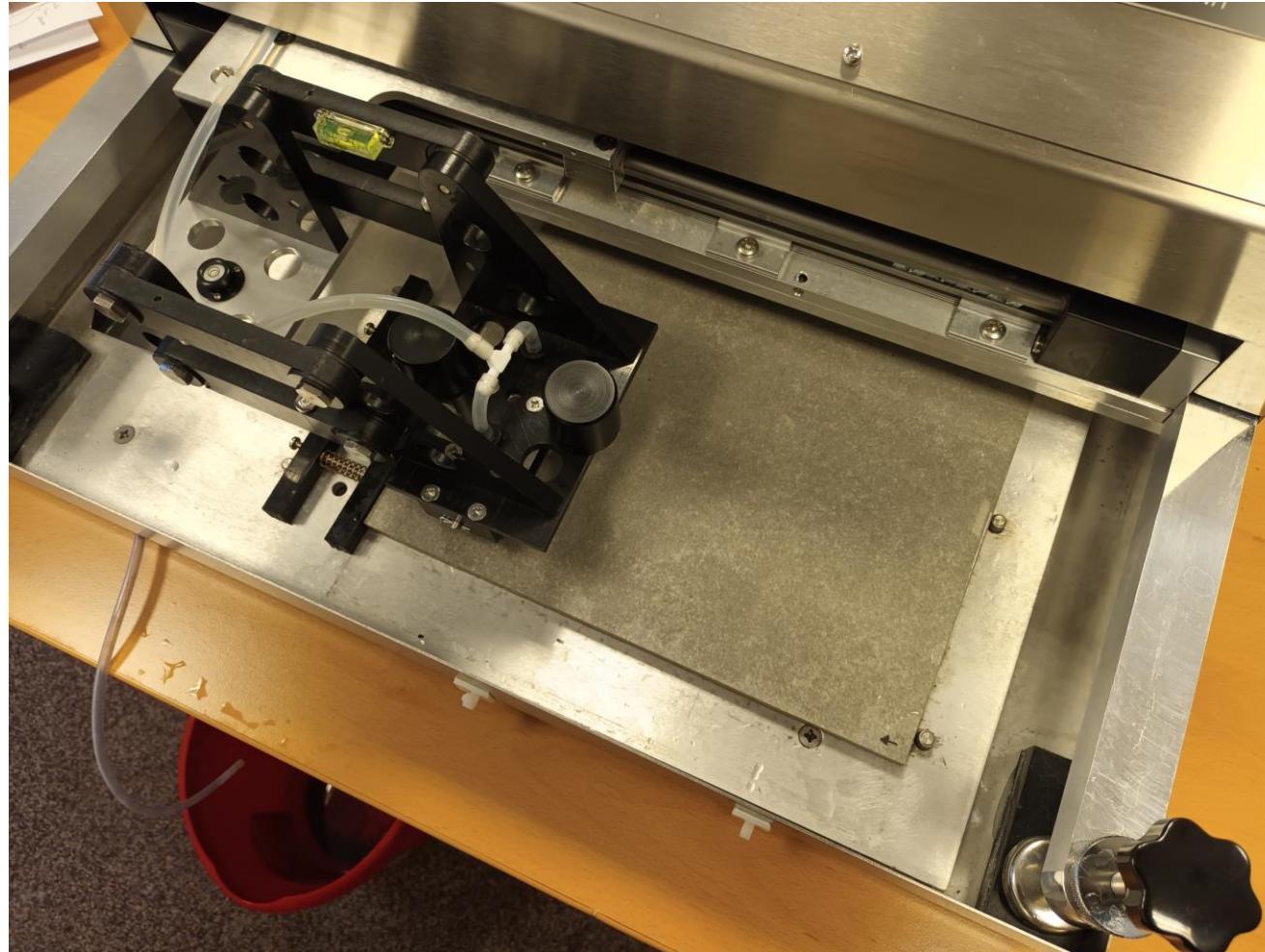
200 mm stroke length

Slider rocks back and forth

Slider edges prepared on
P400 / wet PLF

Sample or sample holder

Easily transferred to adjacent
pendulum then returned to AW



Sample can be fixed in position as shown

Sample holder can be removed for larger samples

Water delivered from above (adjustable) then runs to drain

Prime function to wet the sample
Before starting wear process

Low water alarm (being developed)



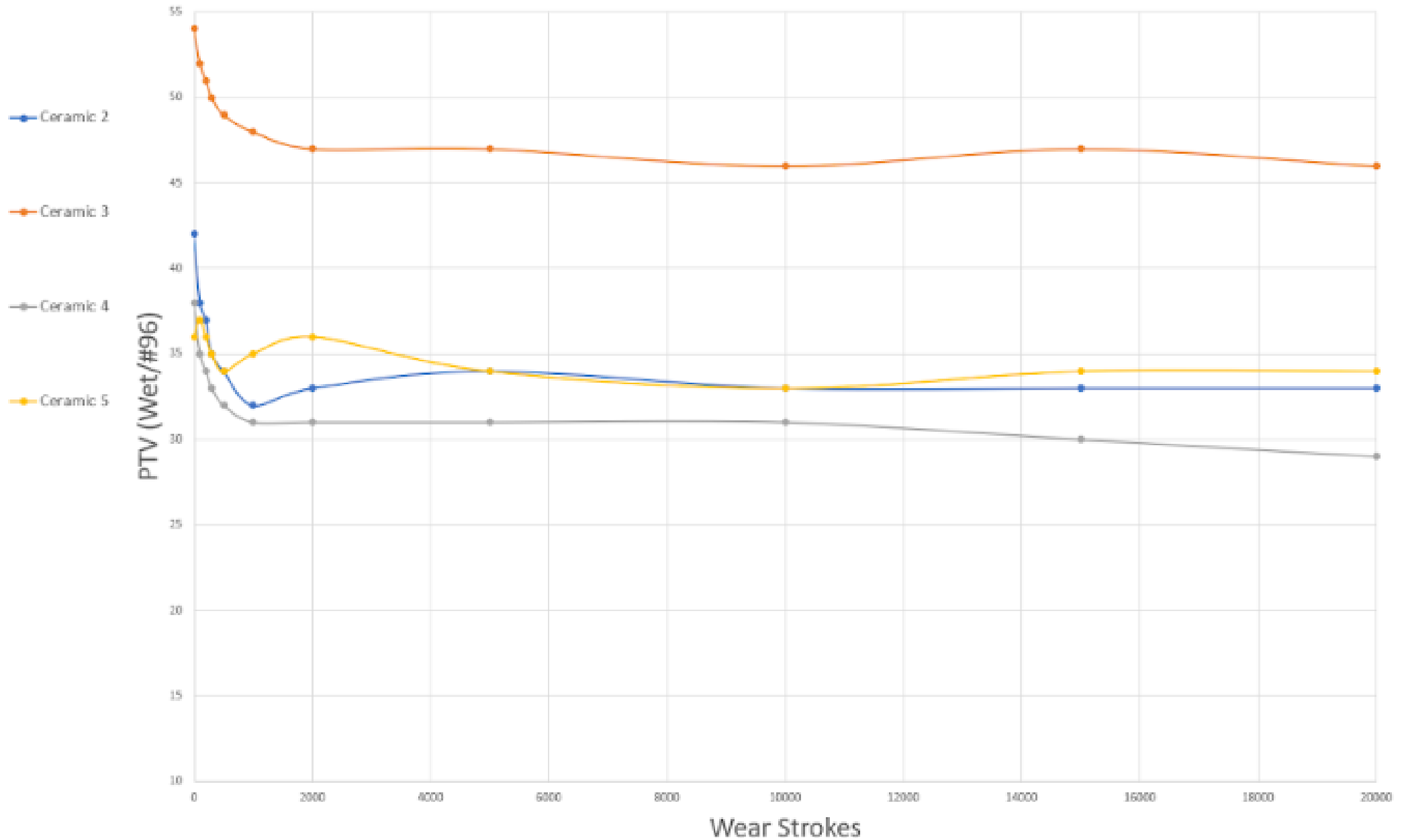
Accelerated wear strokes v wet PTV data

Strokes	Ceramic 2	Ceramic 3	Ceramic 4	Ceramic 5
0	42	54	38	36
100	38	52	35	37
200	37	52	34	36
300	35	50	33	35
500	34	49	32	34
1000	32	48	31	35
2000	33	47	31	36
5000	34	47	31	34
10000	33	46	31	33
15000	33	47	30	34
20000	33	46	29	34

Table 1. 4 different ceramic samples up to 20 000 strokes

Slip Resistance with Wear

Ceramics to 20K Strokes



Accelerated wear strokes v wet PTV data

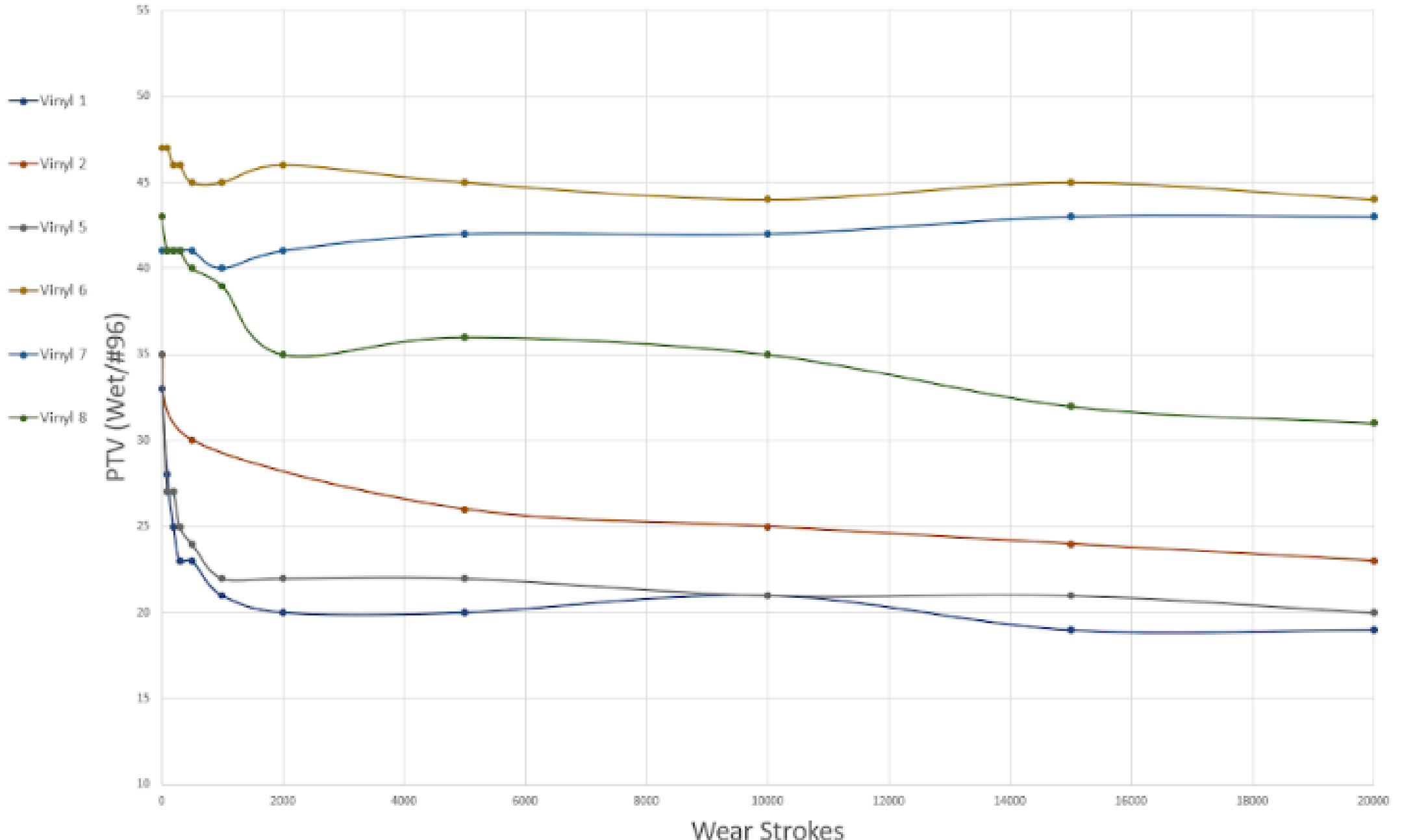
Strokes	Vinyl 1	Vinyl 2	Vinyl 5	Vinyl 6*	Vinyl 7*	Vinyl 8
0	33	35	35	47	41	43
100	28	-	27	47	41	41
200	25	-	27	46	41	41
300	23	-	25	46	41	41
500	23	30	24	45	41	40
1000	21	-	22	45	40	39
2000	20	-	22	46	41	35
5000	20	26	22	45	42	36
10000	21	25	21	44	42	35
15000	19	24	21	45	43	32
20000	19	23	20	44	43	31

Table 2. 6 different resilient samples up to 20 000 strokes

* Note: Vinyls 6 and 7 are safety floorings designed to be durable in terms of wet slip resistance

Slip Resistance with Wear

Vinyls to 20k Strokes



Comments / Observations

Works on a range of materials including resilients

To date the machine has worked on all samples studied without issue

No visible damage to samples to date

Developed a simple cleaning process to ensure no rubber is left on the test surface before pendulum test is undertaken

0.2 volume percent solution for 1 minute spread on the test surface with a soft brush then thoroughly rinsed with clean water

Completed 275 000 strokes

Estimated slider life 3 million strokes - dependent on sample(s)

Further development

More samples / strokes

Link to in-service performance

In-situ work

Profiled surfaces

Cleaning head (prototype ready)

Slider 55

Any comments or questions?