

Comparison of Full Length Burn testing according ISO 12863 and the proposed alternative by NIST Laboratories, USA

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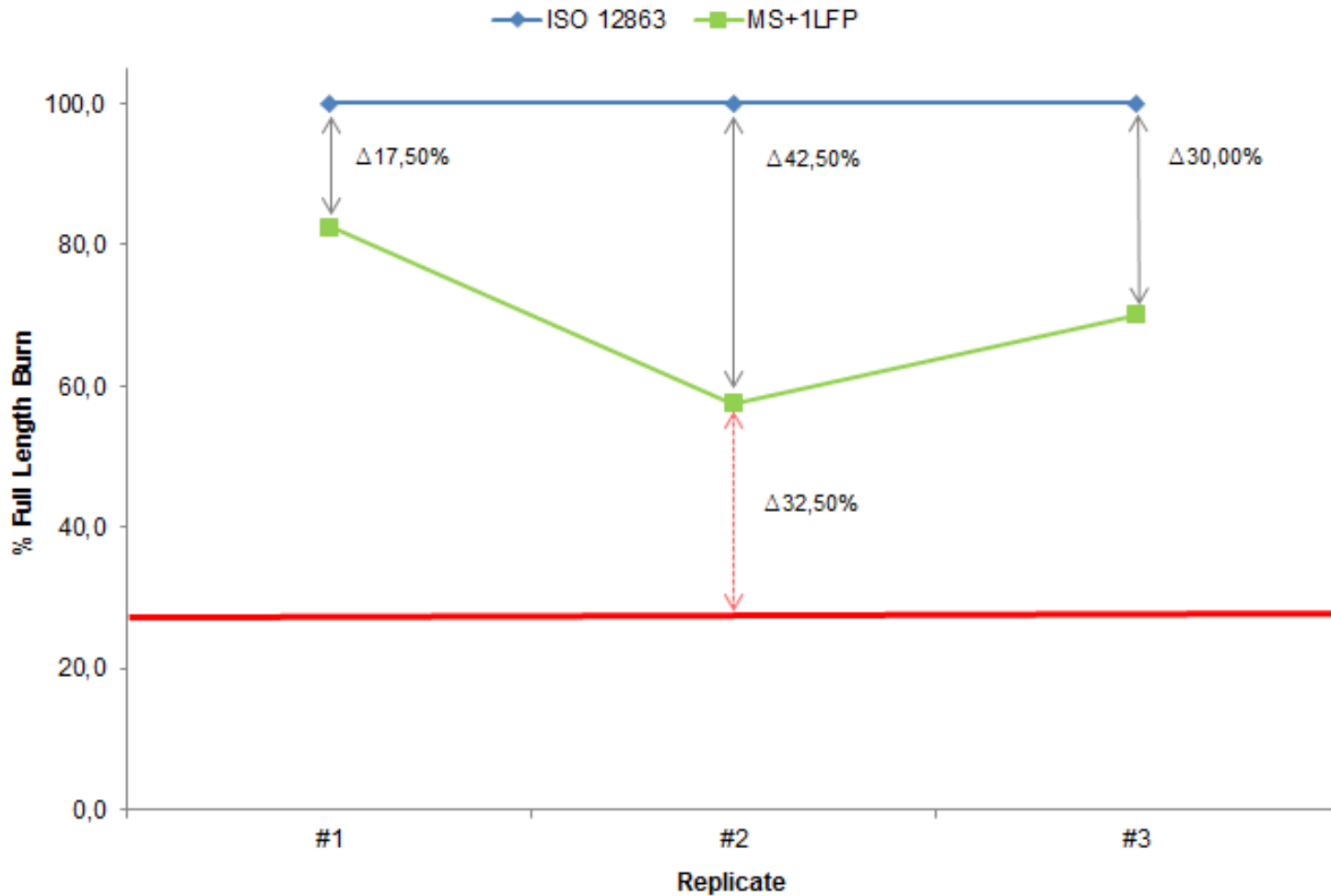
#1 - internal Study – 2013

Results & Observations

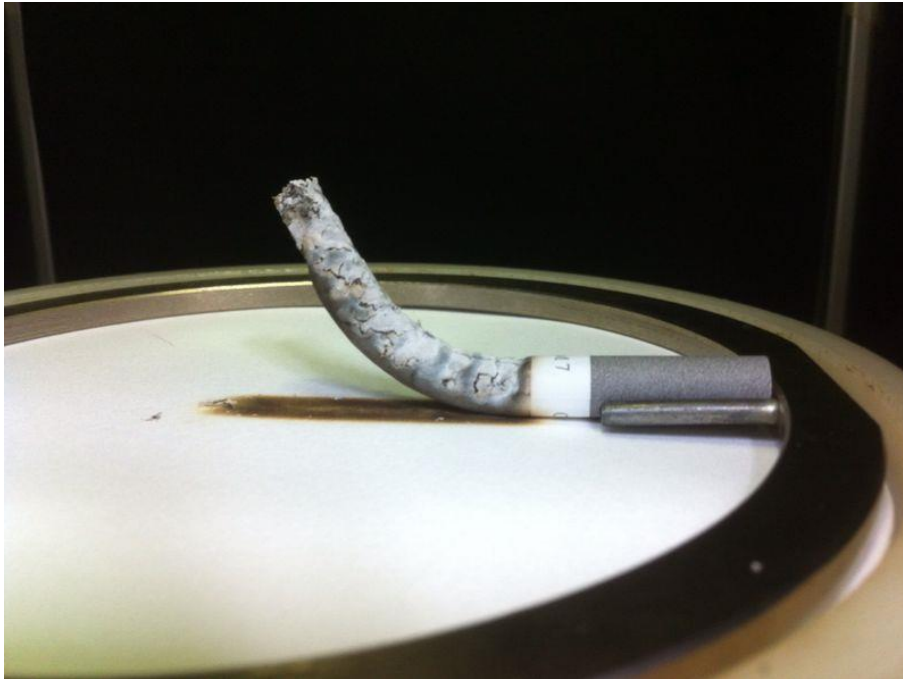
Difference in SE-results when performing Full Length Burn testing with NON FSC cigarettes according ISO 12863 and the proposed alternative - thin metal sheet+1layer of filter paper

1st internal Study – 2013 Results

Study #1 - NON FSC sample



1st internal Study – 2013 Results



- NON FSC cigarette / test piece on the metal sheet+1 layer of filter paper

1st internal Study – 2013

Observations

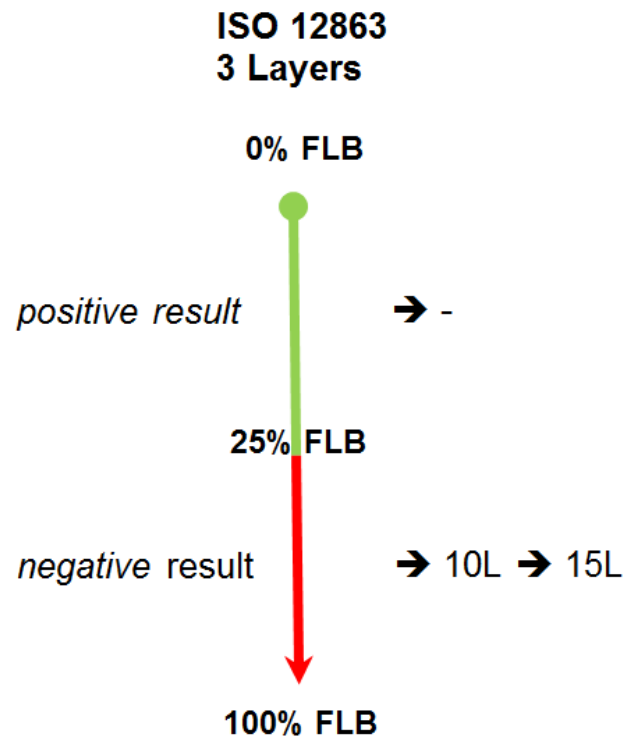
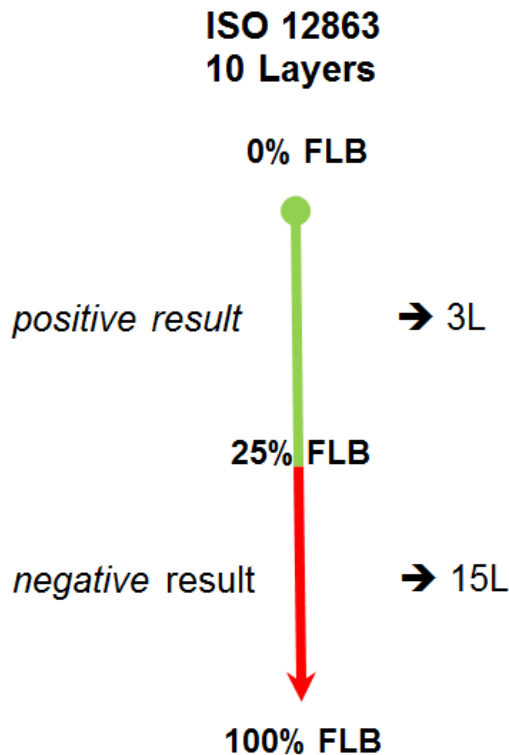
- Compared to ISO 12863 a significant number of NON-FSC cigarettes self-extinguish when using the metal sheet + 1 layer of filter papers.
CORESTA Monitor TP No. 7: 100% FLB vs. MIN. 57,5% FLB
- Difference of 42,5% in the results when performing with the metal sheet.
- All tested samples failed the test according ISO 12863 and on the metal sheet
- Results on the metal sheet could be misleading
- Results are not 100% comparable to the existing ISO / ASTM method

Objective of this years study - 2014

#2 - To present the difference in FLB performance of FSC cigarettes when performing the test according ISO12863 and on a thin metal sheet + 1 layer of filter paper as proposed by NIST laboratories.

2nd internal Study - 2014

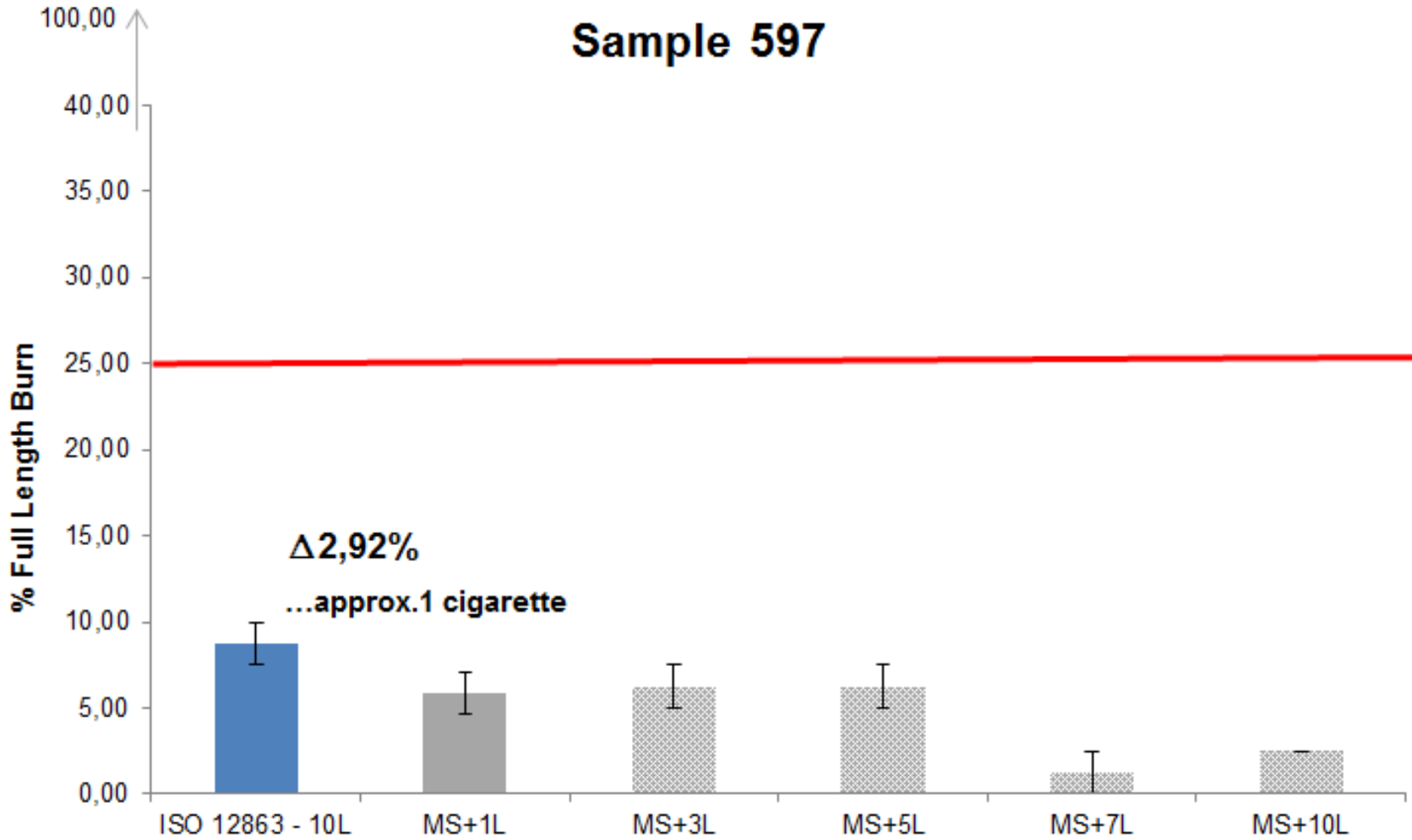
“Progressive testing” – Comparison between ISO12863 and the alternative proposal, when increasing the layers of filter paper on the metal sheet



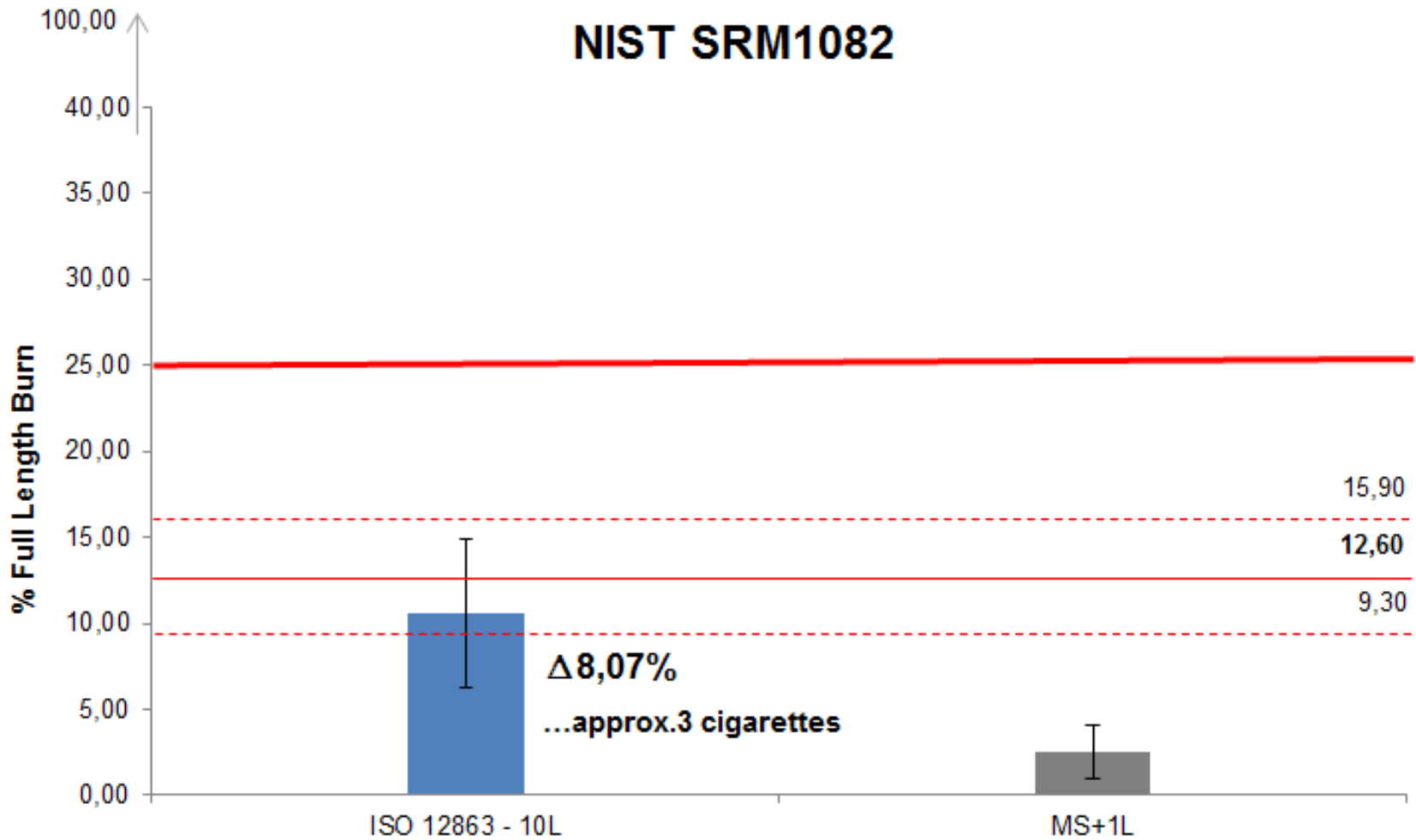
Study Outlook and Objective - #2

- low FLB rate
 - Sample 597
 - NIST SRM 1082 monitor brand (NIST certified I.S. value: $12,6 \pm 3,3\%$)
- high FLB rate
 - Sample 591
 - NON FSC-CM7 TP
- Comparison between ISO12863 and proposed metal sheet on defined cigarette samples
- Results on progressive testing
- Followed by our Observations & Conclusions
- Filter paper used: Whatman #2

Results – low FLB rate

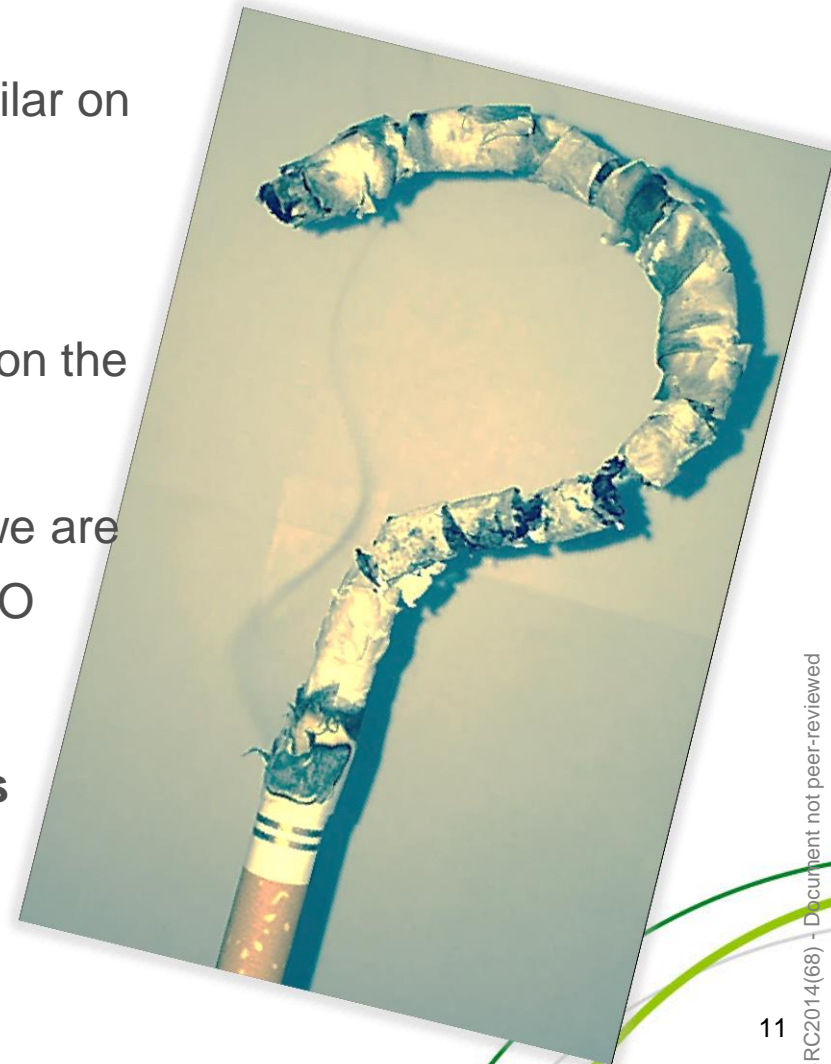


Results – Monitor Brand

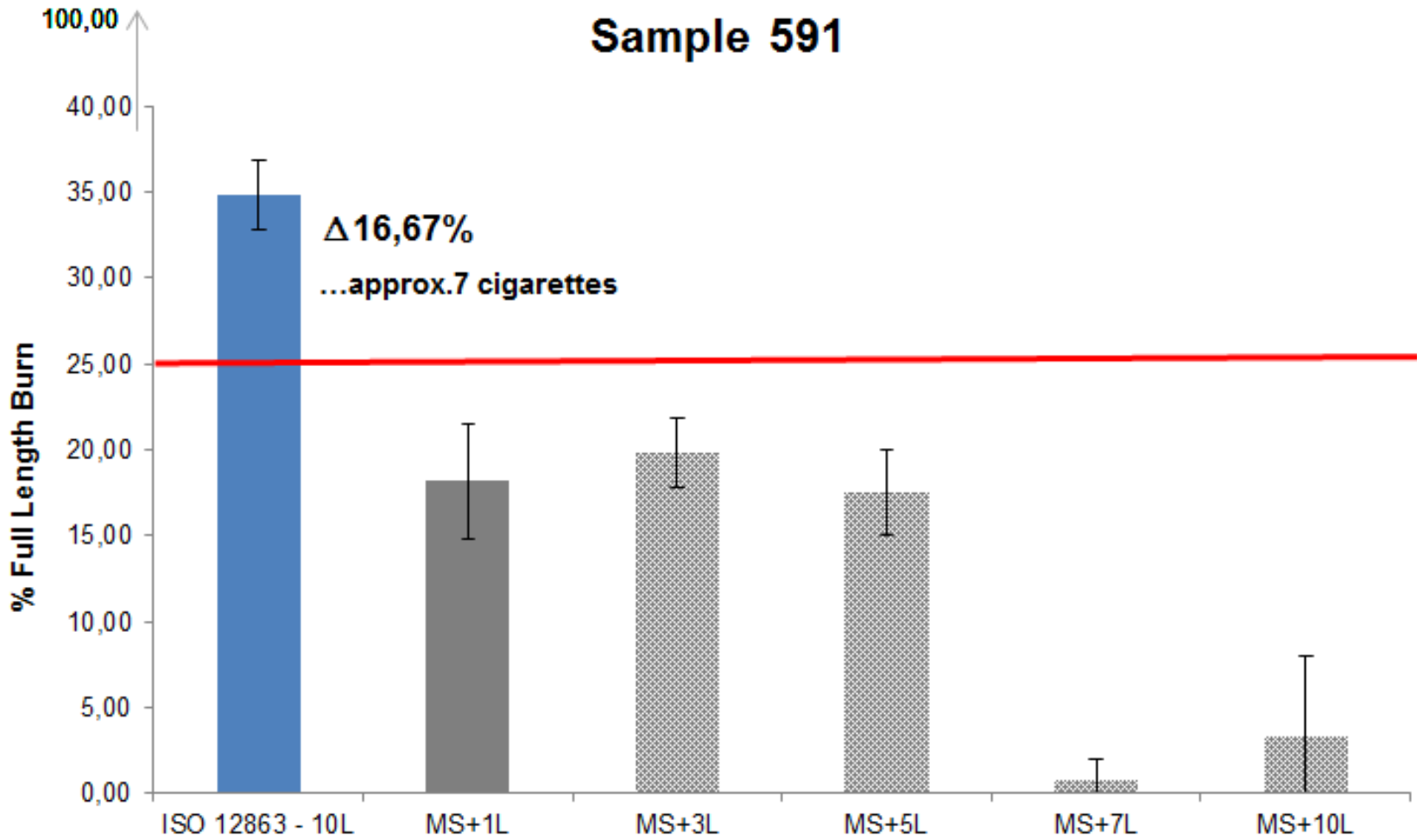


Observations – low FLB rate

- Cigarettes with a low FLB level perform similar on the metal sheet+1L FP and ISO 12863
- Results are not 100% comparable
- Lower variation of results when performing on the metal sheet +1L FP
- By adding more layers on the metal sheet we are not able to reach the same result as with ISO
- **Would all that also be valid for cigarettes with a high FLB rate?**



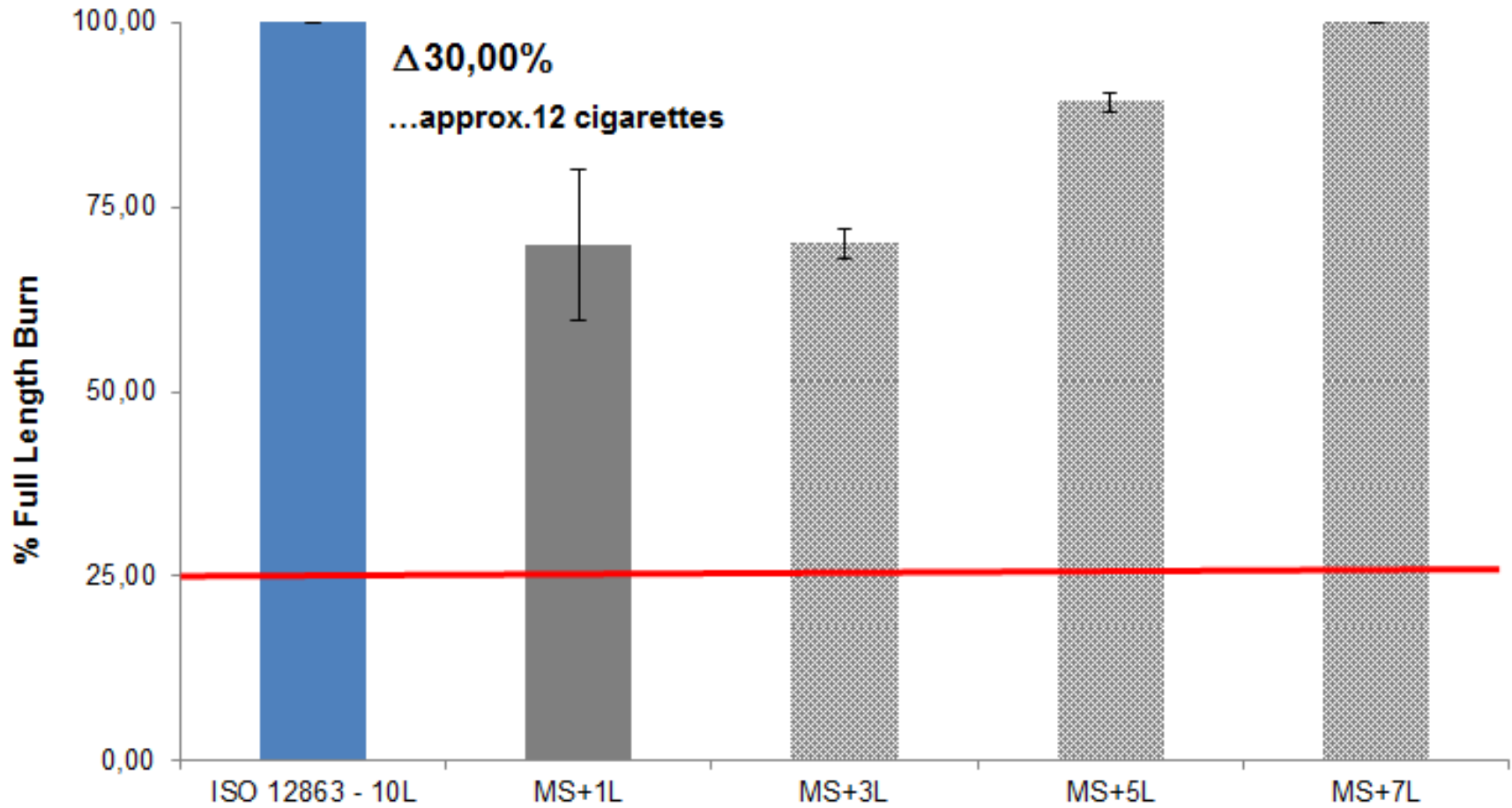
Results – high FLB rate



Results – high FLB rate



NON LIP



Observations when using the Metal sheet + 1 layer of filter paper **compared to ISO 12863**

● 0 - 10% FLB → “low Full Length Burn – rate”

- Minor difference in the results (2,92%)
- Similar SD

● 10 - 25% FLB → Example: NIST Monitor cigarette

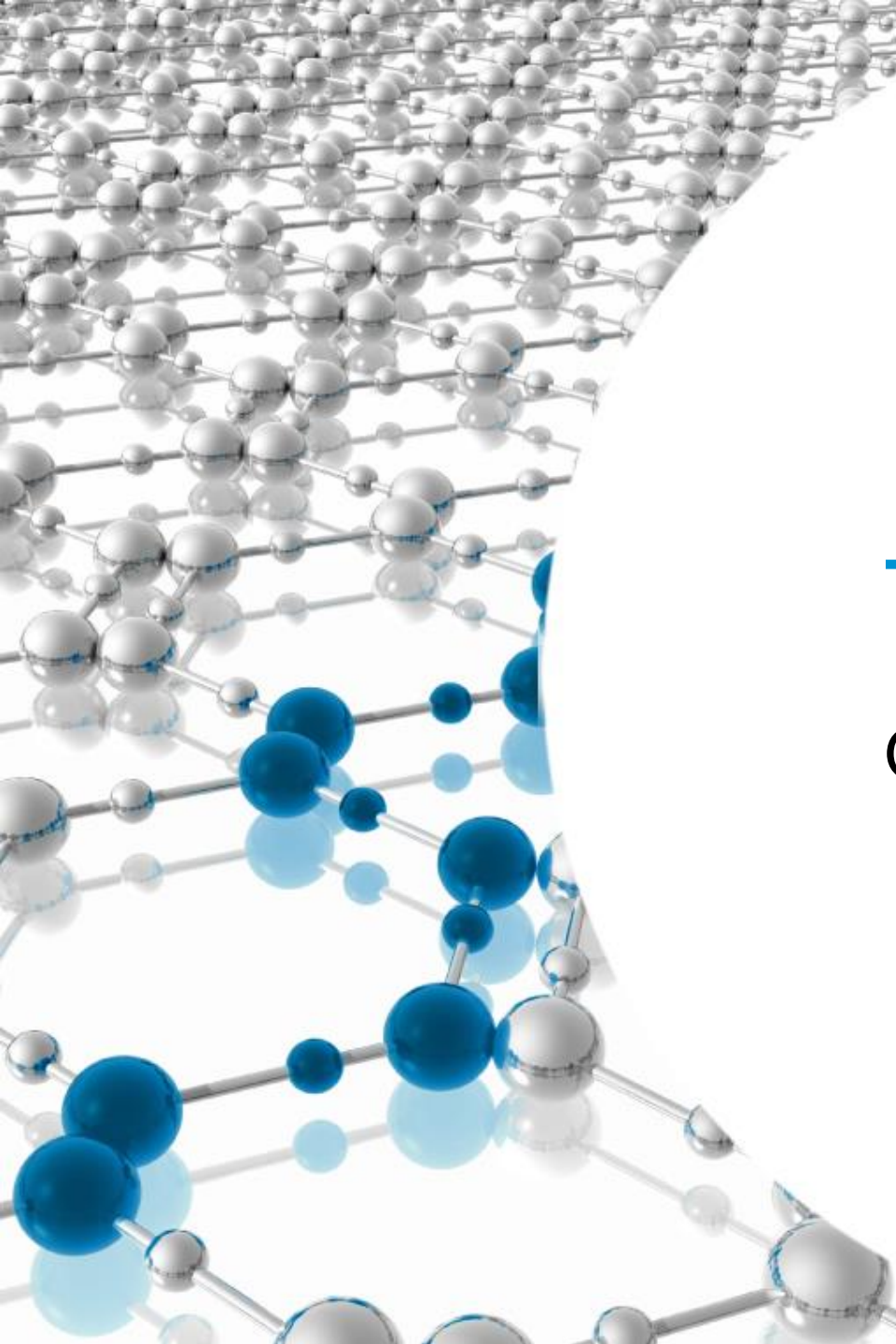
- Difference in the results (8,07%)
- Difference in the variation; lower SD with the metal sheet
- Not comparable and exchangeable to ISO/ASTM

● 25 - 100% FLB → “high Full Length Burn – rate”

- Significant difference in the results (16,67% / 30,0%)
- **Test with metal sheet and 1 layer of filter paper is easier to pass!**
- **A product >25% FLB could be on the market when using the alternative method with the metal sheet!**

Conclusion

- In our study, the proposed alternative using a thin metal sheet + 1L of filter paper turns out to be not an appropriate and comparable solution to the existing ISO 12863 and ASTM E.2187-09
- Results are not 100% comparable
- Progressive testing is not possible
- Increasing the amount of filter papers on the metal sheet would not make sense for LIP products



Thank you!

Questions?

performance by understanding