

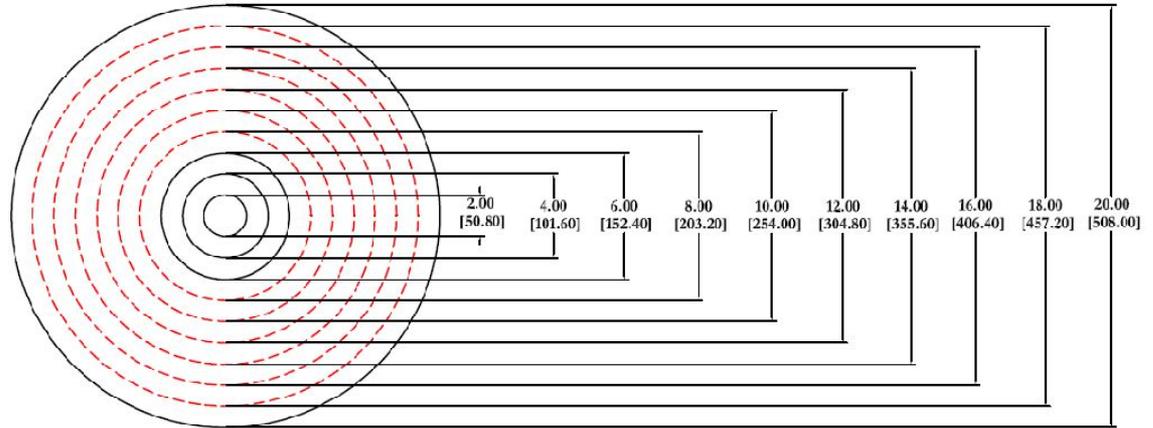
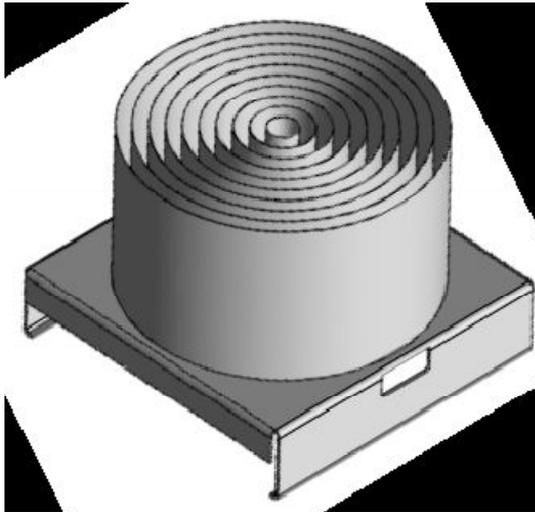
# Functional Testing Requirements



# Shower heads and handshowers

- Discussion with members of JRC and European Commission: functional testing for showers is required (also part of mandatory EU Energy Labels)
- Swedish test method: rinsing oil from a cloth has been discussed but is not a method of determining the function of a shower that can be applied to all types of tapware
- TechWG compared existing test methods: Watersense, Watermark, Mexican standard ► test methods are quite similar
- Best-of-all approach: use EPA Watersense test method, but simplify
- Spray distribution test with annular ring
- Multifunction showers: manufacturer chooses spray mode to test (at least one spray mode must pass distribution test)
- Flow rate (and energy) class based upon highest available flow rate

# Shower heads and handshowers



- 1<sup>st</sup> and 2<sup>nd</sup> ring  $\leq 75$  % of total collected water volume
- 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> ring  $\geq 25$ % of total collected water volume

# Shower solutions

- Same functional testing as for shower heads and handshowers
- For units sold with two or more showers, the manufacturer can choose one spray mode from whichever shower for functional testing
- Flow rate and energy class determined by outlet with highest flow rate
- Shower valves sold without showerhead are out of scope as there cannot be any functional testing without having a shower outlet
- Where an EN exists, the product shall comply with the relevant EN standard, e.g. EN 1112, EN 1111, EN 817 etc. (where local requirements differ from the EN, they should be accommodated)

# Taps

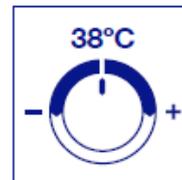
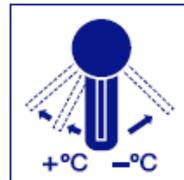
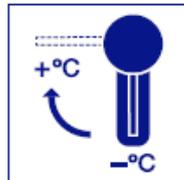
- Functional testing that covers the broad variety of different types of taps is hard to establish
- Research by Portugal and USA indicate that it is difficult to design a test that covers all of the various uses (e.g. hand washing, pot filling etc); therefore the research was halted due to lack of added value
- Swedish test seems to favour certain technologies (volume brake with spring) and does not cover the variety of available technologies
- Proposal: functional test for A and B rated products to validate pressure independence at three pressures – equates to no-loss of functional performance

# Taps

- Fallback position:
- User comfort mainly determined by three criteria:
  - To deliver water
  - Tap does not splash
  - Water stream is not too hard
- One possible measurement could be the spray velocity: if the stream is too fast, splashing and user discomfort are likely
- Portuguese test method (established but not tested on many products): measure stream resp. spray force (test method analog WaterSense)

# Technical icons

- Technical icons describe a functionality or feature of a product that helps save water and energy
- So far, seven technical icons were considered (from left):
  - Volume break
  - Cold start
  - Temperature break
  - Thermostat
  - Pressure-independent flow rate
  - Time-controlled (mechanical self-closing)
  - Electronic (sensor)



# Technical icons – definitions

- It was discussed which features and functions can save water and energy and how/if this can be quantified
- Volume break: acknowledged by Swiss energy label, Swedish label and EU Ecolabel ► measure flow at break point, define characteristics of break point
- Side note: booster functions which return to standard mode after switch off ► measure flow in standard mode (ignore boost flow rate)
- Cold start: acknowledged by Swiss energy label (bonus) and Swedish label, but hard to argue (2-handle taps and pillar taps are also cold start) ► further discussion required, saving potential needs to be quantified
- Temperature break: functions above 38°C, therefore no relevance for energy calculation for showers ► for taps, energy saving potential needs to be quantified (further discussions needed)

# Technical icons – definitions

- Thermostat: if declared, product must comply to EN1111 – apart from that potential savings hard to calculate
- Pressure-independent flow regulation: mandatory for two best (lowest) flow rate classes on taps and showers
- Time-controlled: must meet EN 816 (includes pre-set shut-off time)
- Sensor-controlled: must meet EN 15091, auto-off max. 2 seconds after removal of hands, max. flow time 2 minutes (e.g. if sensor is blocked)
- In addition, electronic taps and valves must shut off water flow at power loss, max. standby power consumption < 0.3 Wh

# Conclusion

- Functional tests are not an end in itself but should set a certain performance level in order to avoid customer dissatisfaction (and potentially discredit the Water Label)
- If a technology is acknowledged as water- and energy-saving, the relevant measurements should reflect this (no ex-post bonuses or additional ratings)
- All suggested functional tests must be easy to reproduce even in manufacturers' test labs (predictability, cost effectiveness, open to all)
- Best-of-all approach: use what is common in the market (and therefore underpinned by data) and simplify when necessary
- Do not introduce a certification system: all is based upon self-declaration with audit verification

# Timelines

- EBF plenary meeting 05 July 2018: vote for proposal and (hopefully) approve it
- Until 31.12.2018: finalize technical details and documentation
- 01.01.2019: introduce (voluntary basis) new details
- ISH 2019: presentation to the industry and public
- Until 31.12.2020: transition period in line with normal standardisation co-existence period (old and new details in parallel)
- From 01.01.2021: only new details

# The end

- What we want to achieve:



- What we want to avoid:



# Don't Forget Sanitaryware...

- Focus on Taps and Showers ► To fit in with the work to gain a Voluntary Agreement with the EU Commission
- Aware that there is work required to update the sanitaryware aspects ► flushing systems and Urinals, Energy calculation for Baths
- Work to be done by Experts ► led by FECS – open to all

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# The very end... for now

- What we want to achieve:



- What we want to avoid:



# Thank You

