EI 1590 – microfilters

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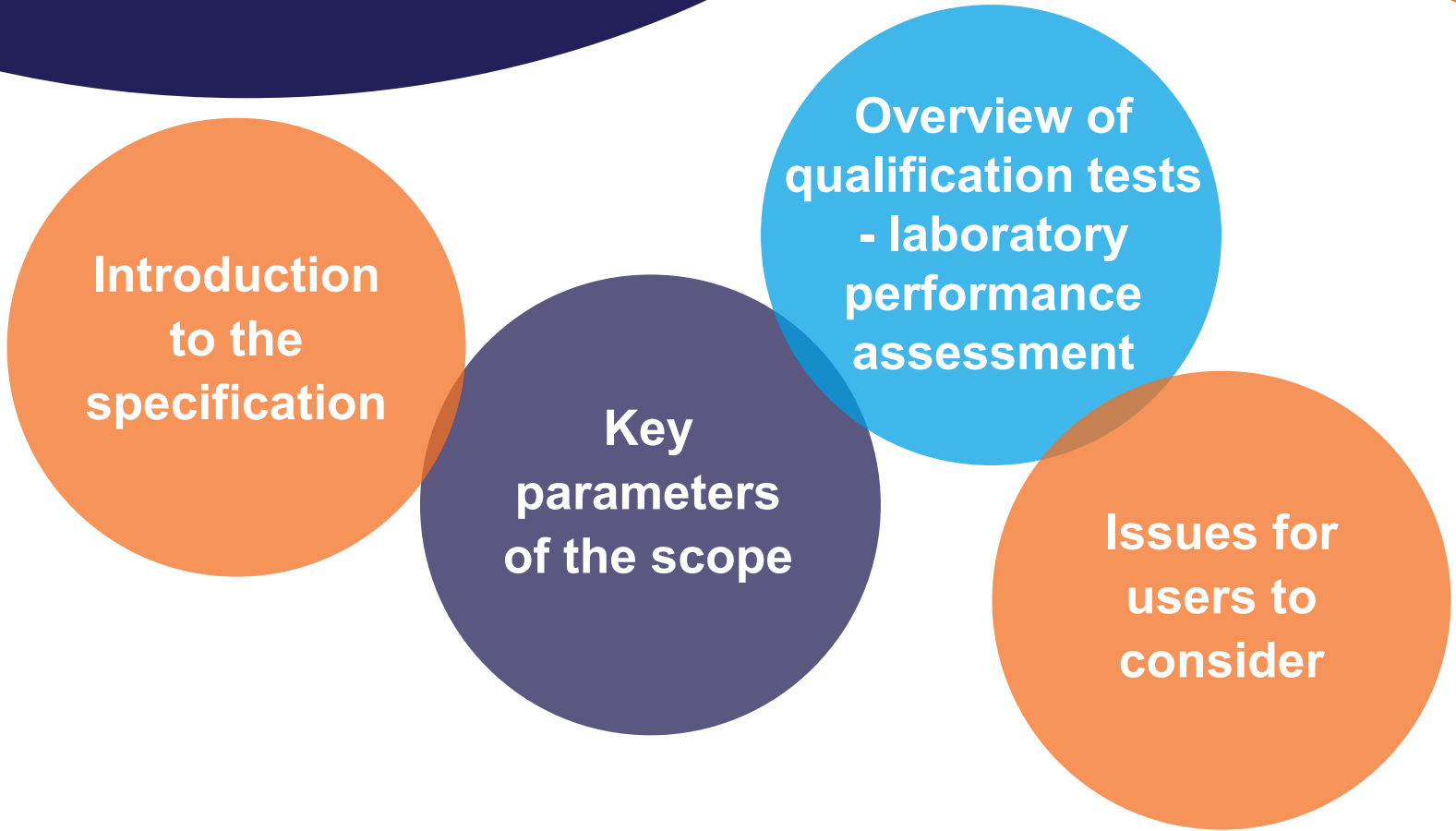
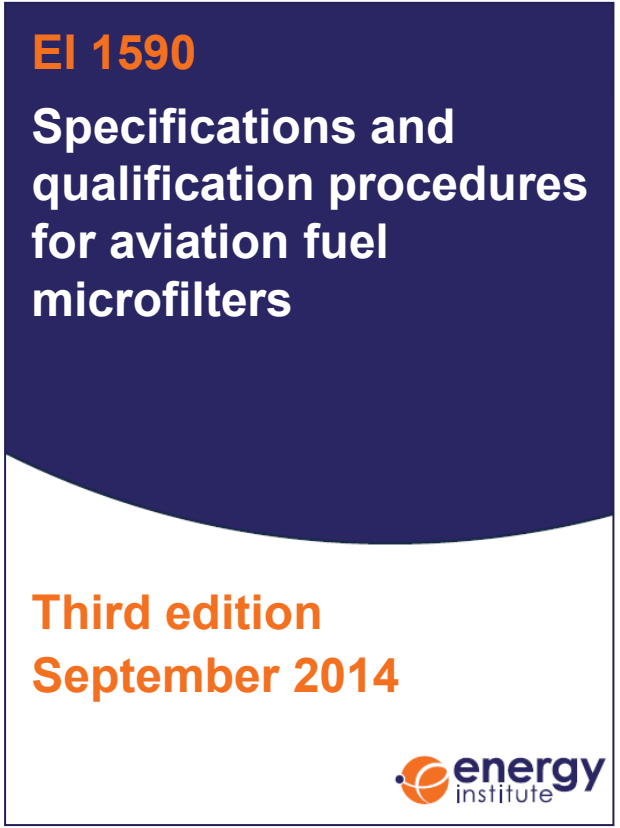
Presentation overview



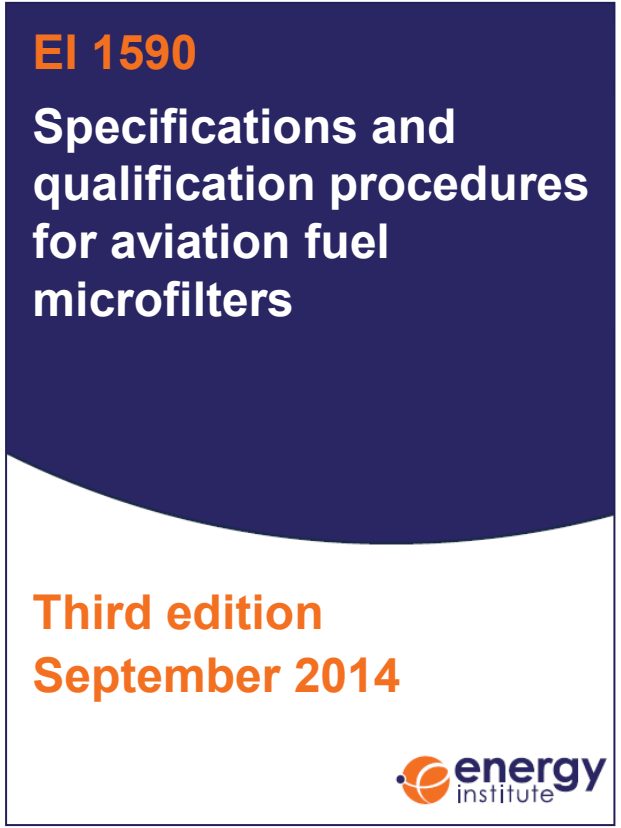
EI 1590 – microfilters

- First edition published by The Institute of Petroleum in 1999
- Third edition published by the EI in September 2014
- Fourth edition due to be published shortly



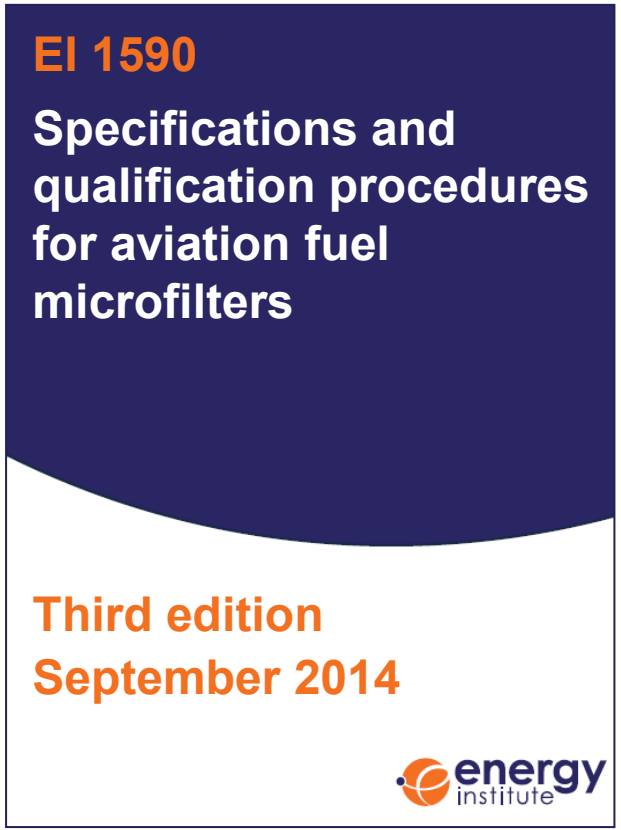
EI 1590 – microfilters - Scope

- Intended to remove particulate matter in both avgas and jet fuel above airport and for avgas on airport
- Provides protection for downstream filter components
- Outside-to-in flow format
- Elements nominally rated as 1.0, 2.0, 3.0, 5.0 and 10.0 µm
- 22 psi maximum differential pressure



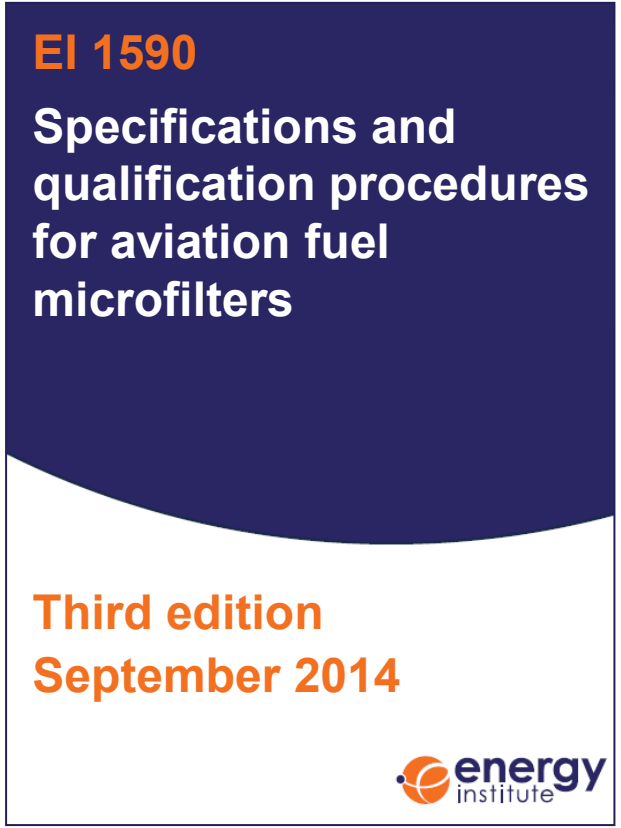
EI 1590 – microfilters - Scope

- **Minimum flow rates …**
  - 50 mm (2 in) → 2.5 L/sec/m (1 Gal/min/in)
  - 100 mm (4 in) → 5 L/sec/m (2 Gal/min/in)
  - 150 mm (6 in) → 10 L/sec/m (4 Gal/min/in)



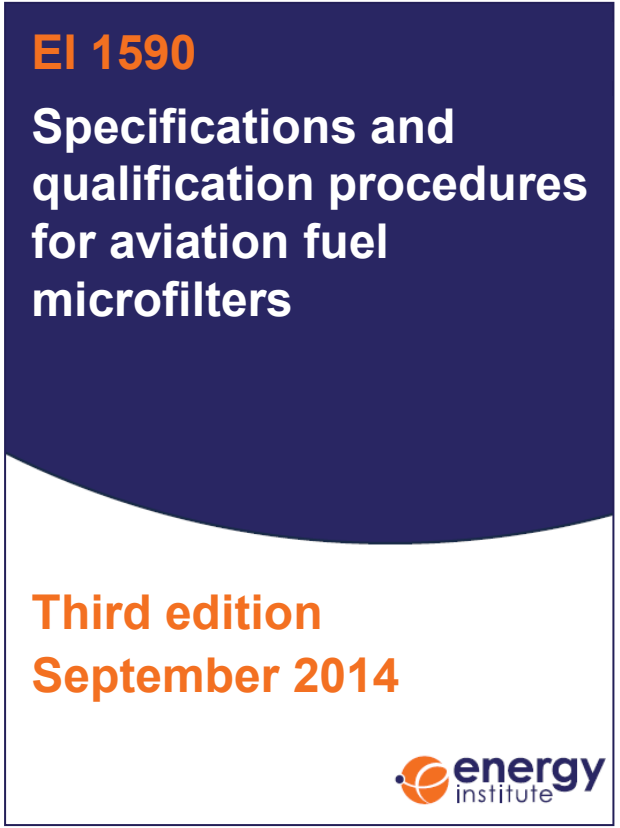
EI 1590 – microfilters - Scope

- **Changes to be introduced by 4th edition:**
  - Inclusion of 125 mm (5 in.) element
  - Clarify that there is no rating <1 µm
  - 2.0 µm qualification read across to 3.0 µm
  - Clarify that elements can be used in an EI 1587 vessel (for single cartridge housings)
  - Test fuel can be one meeting a jet fuel specification other than ASTM D1655 or DEF STAN 91-091 by agreement with user (e.g. Russian TS-1, Chinese No 3)
  - Compatibility test protocols via EI 1589



EI 1590 – microfilters Laboratory Qualification Tests

- **Single-element testing**
- **Test dust challenges**
  - 1.0 µm – iron oxide
  - 2.0 or 3.0 µm - 90 wt% A1 Ulfrafine & 10 wt% iron oxide
  - 5.0 µm - A1 Ulfrafine
  - 10.0 µm – A2 Fine
  - 50 mg/L test dust injection
  - Rated flow
  - 50% of rated flow
  - Rated flow with simultaneous 100 ppm water

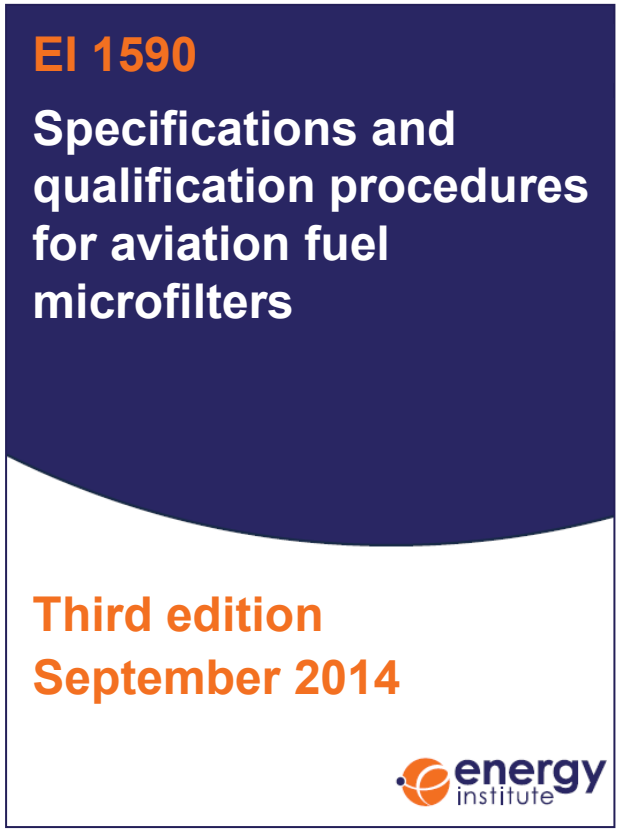


EI 1590 – microfilters Laboratory Qualification Tests

- **Performance criteria**
  - Solids content < 0.15 mg/L (max)
  - Media migration < 10 fibres/gal
  - Withstand 75 psi dP for 5 minutes without structural failure or extrusion of media
  - Meet compatibility requirements for four test fluids

EI 1590 – microfilters
User awareness

- Microfilters are not designed to remove free water from fuel
- Designed for single-use, although some manufacturers produce elements with a replaceable media shroud (i.e. the centre tube is reused)



Any questions?

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