EI Specification 1596

Design and construction of aviation fuel filter vessels

3rd edition

energy institute

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FOREWORD

This publication has been prepared by the EI Aviation Committee to provide the industry with mechanical specifications for the design and construction of aviation fuel filter vessels. Four types of vessels are covered: dirt defence filter, water barrier filter, filter/water separator and microfilter vessels.

While this publication provides minimum levels for selected aspects of vessel design/performance, it is not intended to completely describe all aspects of filter vessel performance and design relevant to successful application. It remains the responsibility of the purchaser to ensure that the vessel is fit-for-purpose in the intended application. Note that the approval of the mechanical design of a vessel is the responsibility of the purchaser.

For the purposes of demonstrating conformance to this publication the words 'shall', 'should' and 'may' are used to qualify certain requirements or actions. The specific meaning of these words is as follows:

– 'shall' is used when the provision is mandatory;
– 'should' is used when the provision is recommended as good practice, and
– 'may' is used where the provision is optional.

A vessel characterised as 'meeting the requirements of EI 1596' shall comply with all mandatory language in this publication appropriate to that type of vessel as distinguished by the use of the word 'shall'.

This publication is not in any way intended to prohibit the manufacture, purchase or use of vessels meeting other requirements.

The main changes in this edition from the 2nd edition are:

– the deletion of requirements for filter monitor vessels (that type of filtration system being no longer considered suitable for use in aviation fuel handling systems[1]);
– the addition of requirements for dirt defence filter vessels;
– the addition of requirements for water barrier filter vessels;
– the deletion of requirements and recommendations for three-stage systems;
– inclusion of dimensional requirements for vessel data plates;
– the amendment of requirements for water defence systems, and
– recognition that the date elements are installed in a vessel can be recorded by the user either on the operational data plate or on a separate label/placard on or near the vessel.

This is the third edition of this publication, which supersedes all earlier editions. With the publication of the third edition of EI 1596, the second edition is hereby formally withdrawn from publication.

It is assumed that all users of this publication are either fully trained, or under the supervision of a responsible trained person, who is familiar with all normal engineering safety practice, and that all such precautions are being observed. Users of this publication are responsible for ensuring compliance with the requirements of locally prevailing health and safety legislation.

1 For further details of the industry transition away from the use of filter monitors, see EI publication *Proceedings of an EI aviation fuel filtration seminar held 30 January 2018*.

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It is hoped and anticipated that this publication will assist those involved in manufacturing and purchasing filter vessels. Every effort has been made by the EI to assure the accuracy and reliability of the data contained in this publication; however, the EI makes no representation, warranty, or guarantee in connection with this publication and hereby expressly disclaims any liability or responsibility for loss or damage resulting from its use or for the violation of any local or regional laws or regulations with which this publication may conflict.

Suggested revisions are invited and should be submitted to the Technical Department, Energy Institute, 61 New Cavendish Street, London, W1G 7AR, (e:technical@energyinst.org).

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Project co-ordination and editing was undertaken by Martin Hunnybun (EI).

1 INTRODUCTION AND SCOPE

1.1 INTRODUCTION

This publication has been prepared to provide mechanical specifications for the design and construction of vessels containing filter elements used in aviation fuel handling systems.

1.2 SCOPE

This publication provides requirements for:

– design and construction of filter vessels, and

– vessel accessories.

Although this publication is primarily intended to apply to vessels for civilian applications, many of the requirements may also be applicable to vessels intended for military use. Further advice should be sought from manufacturers for specific military applications.