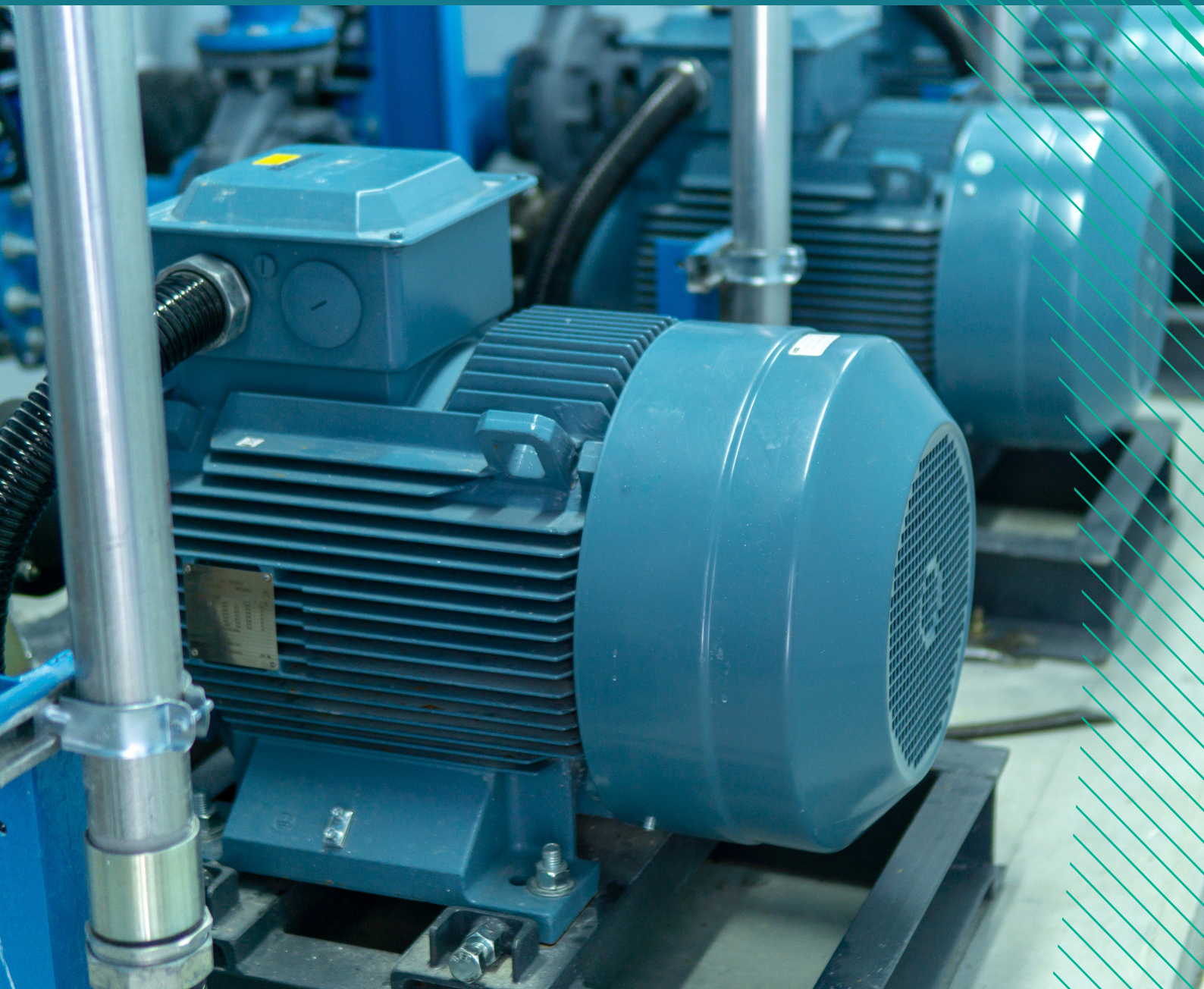


# Water Pumps

Ecodesign Compliance Assessment

Summary Report



# Water Pumps: Ecodesign Compliance Assessment

## Summary Report

July 2023

### **Sustainable Energy Authority of Ireland**

SEAI is Ireland's national energy authority investing in, and delivering, appropriate, effective and sustainable solutions to help Ireland's transition to a clean energy future. We work with the public, businesses, communities and the Government to achieve this, through expertise, funding, educational programmes, policy advice, research and the development of new technologies.

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# Water Pumps: Ecodesign Compliance Assessment

## Summary Report

### Introduction

This report gives an overview of the results of ecodesign market surveillance of water pumps organised between 2020-2022 by SEAI and conducted as part of ongoing national market surveillance activities relating to the Ecodesign Directive (2009/125/EC).

It identifies the levels of non-compliance encountered relating to water pumps that were available on the Irish and broader European market and may facilitate a degree of comparison between other water pump market surveillance initiatives over time. This report summarises the findings from product assessments carried out to date.

When the work was undertaken, the Market Surveillance Authority (MSA) for ecodesign and energy labelling in Ireland was the Minister for the Environment, Climate and Communications and SEAI was supporting the Minister by organising market surveillance on his behalf. The MSA designation was subsequently transferred to SEAI in December 2022.

## Relevant legislation

The regulations and standards in force and used to verify compliance were:

### *Applicable regulations*

- Commission Regulation (EU) No 547/2012 of 25 June 2012 implementing Directive 2009/125/EC of the European Parliament and of the Council with regard to ecodesign requirements for water pumps (as amended).

### *Applicable standards*

- EN 16480:2016 Minimum required efficiency of rotodynamic water pumps.
- Measurement and calculation procedure as laid down in Annex II of Regulation 547/2012.

## Market screening and product selection

A 'long list' of water pumps in scope of the regulations was compiled from several sources in order to provide (insofar as possible) a reasonable representation of products available on the Irish market. Sources included water pump product listings on electrical retailers' and manufacturers' websites that offered products for sale on the Irish market.

As part of the screening process, we considered large water pump products and the testing capabilities of independent test laboratories and concluded that we would not be able to consider market surveillance of these products during this campaign. The reasons are as follows:

- In many cases large water pumps are made to order — they are not produced in series or ordinarily available at a manufacturer's premises for sampling and are not advertised. This means that MSAs cannot employ usual market research methods to identify products that have been placed on the market, and/or put into service in such a manner.
- Where the MSA is able to identify that a product has been placed on the market, conducting independent laboratory testing once a product has left the factory premises is very costly and liable to be disruptive to the business that has procured the product.
- There seems to be a lack of capacity to test larger water pumps in the EU.

We intend to share this report with the European Commission and other MSAs in other Member States to discuss the logistics of how an MSA can undertake testing of large water pump products in the future, as clearly these can't be ignored by MSAs.

A risk-based approach was taken to product selection, with a higher level of risk assigned to products with the greatest market penetration and new market entrants. Using this approach, 21 models were selected for assessment from 13 different manufacturers/brands.

## Assessment of compliance with formal (administrative) requirements

Formal written requests for the provision of appropriate technical documentation were made to the relevant companies. Technical documentation files were received for 13 of the 21 products requested, with the remaining 8 products confirmed to be out of scope, discontinued or otherwise not warranting further assessment.

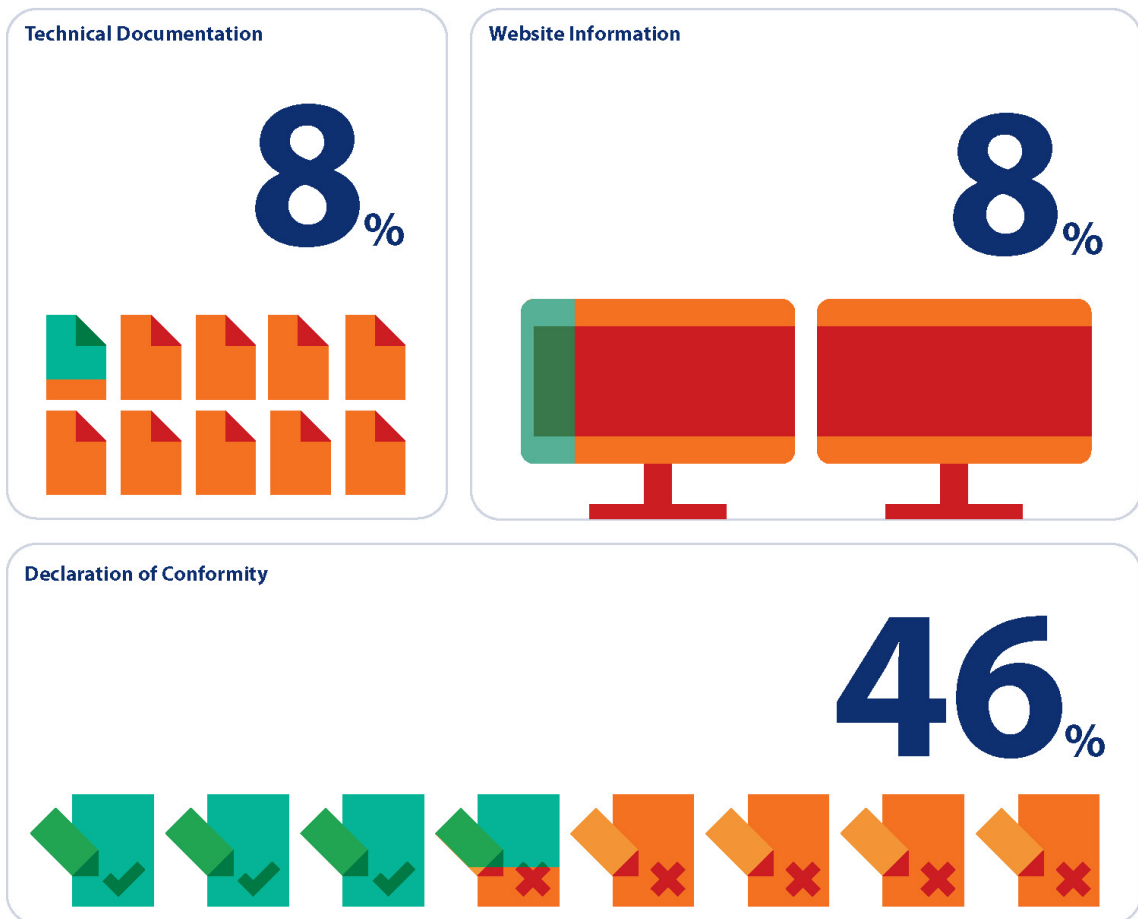
Initial assessments of the 13 responses received showed that only one complete technical documentation file indicating compliance with ecodesign requirements was received at the outset. Based on SEAI’s experience, gained through technical documentation assessments from previous product campaigns, this level of compliance at the initial point of a technical documentation request is not unusual.

The following provides a summary of the findings of the technical documentation assessments undertaken, with further explanation provided below.

### Summary of formal compliance assessments

**13 assessments completed**

Percentage shows compliance



The findings of the technical documentation assessments, are summarised and described as follows:

*'Declaration of Conformity'*: where non-compliant aspects of the Declaration of Conformity (DoC) were encountered, these typically included missing references to the applicable regulation and test standards.

*'Technical Documentation'*: such non-compliances include:

- Absence of certain relevant documentation or specific aspects required, e.g., Declaration of Conformity, test reports.
- Product information not complete or product information not set out in the required format.
- Technical documentation values not supporting the declared values.
- No test conditions or measurement methodologies described.

*'Product Information Requirements'*: meaning non-compliances relating to the product information requirements as detailed in Section 2 of Annex II of Regulation 547/2012, where there is typically a failure to provide all the required ecodesign related information on free-access websites or within the technical documentation of water pump products.

*'% compliant'*: refers to the percentage of instances where compliant documents were provided, (usually after more than one request) and where no non-compliances were identified, and no changes were required by the economic operator.

*'% non-compliant'*: refers to the percentage of instances where non-compliances with respect to the applicable regulations have been identified by the MSA. Actions carried out by the economic operator to rectify such formal non-compliances when identified by the MSA are referred to as 'corrective actions'.

The most common non-compliances encountered when assessing technical documentation were relating to product information requirements, requiring that product information as set out under the regulation is visibly displayed on the product technical documentation and free access websites of manufacturers. The majority of issues encountered related to the format of product information requirements as laid out under Annex II of the regulation.

This may be related to guidance produced by a large representative organisation of pump manufacturers, which appears to recommend that product information can be provided in a manner that is less structured than that specified by Annex II of the regulation.

An updated ecodesign regulation for water pumps is currently under review and it is expected that the requirement for the provision of product information, minimum energy performance and resource efficiency will be considered for different types of water pumps. The new regulation should provide clarity and certainty regarding information requirements for in-scope water pump products.

## Assessment of compliance with technical requirements

Three water pumps were selected for initial verification testing in a laboratory, based on findings from the technical documentation checks (e.g., issues identified in the test reports, non-provision of information), as well as their perceived risk of non-compliance (e.g., high energy efficiency at a low cost, etc.).

Following engagement with the laboratory nominated to test the water pumps, two of the products selected could not be tested as it emerged that the laboratory did not have the apparatus to carry out testing of these variants. Our experience on this occasion indicates a degree of complexity relating to water pump specifications and the need to take great care when specifying testing requirements to ensure that the laboratory procured has the capacity to undertake the testing required.

In the end, the only product tested was a vertical multistage water pump. The unit was shipped to the testing laboratory in accordance with a chain of custody procedure for testing, with purchase and shipping of the product undertaken in July–August 2021.

The following parameters were measured and reported upon by the laboratory:

- Determination of minimum efficiency at best efficiency point (BEP) of at least  $(\eta_{\text{BEP}})_{\text{min requ}}$
- Determination of minimum efficiency at part load (PL) of at least  $(\eta_{\text{PL}})_{\text{min requ}}$
- Determination of minimum efficiency at over load (OL) of at least  $(\eta_{\text{OL}})_{\text{min requ}}$

### Results

The single water pump product tested passed for each of the parameters tested. As this product was deemed to comply with the ecodesign requirements as detailed in the regulation there was no need for further testing of this product.



## Issues encountered during compliance assessments

Over the course of this product assessment campaign, a number of issues were encountered in relation to water pump products within the scope of the regulation, the harmonised standard EN 16480 relating to water pump products, and industry advice provided to manufacturers regarding product information requirements.

Upon engagement with manufacturers, it became clear that the terms used in Regulation 547/2012 to describe the design of water pump products were not commonly used to describe the product at the point of sale. Terminology contained within the regulation, such as end suction own bearing (ESOB), end suction close coupled (ESCC), end suction close coupled inline (ESCCi), vertical multistage (MS-V) and submersible multistage (MSS) were not widely used by manufacturers to describe their products and in many cases were not found within the product technical documentation.

This led to some confusion as to whether the products selected for assessment were within the scope of the regulation or not. In one case, a pump manufacturer claimed that their product did not fall within the scope of the regulation, while also having been found to have published documentation indicating that this product was within scope. At the time of writing this issue has not been resolved, with the case file to be handed over to the appropriate partner MSA to follow up with this manufacturer.

Another issue encountered during this product campaign relates to the harmonised standard EN 16480:2016. In engaging with one manufacturer, it was identified that there were issues surrounding the harmonisation process for this standard, which resulted in the premature publishing of the standard as being harmonised.

An industry association therefore had been providing guidance to its members not to use the published 2016 version of the EN 16480 standard and to use the methodology as laid out in Regulation 547/2012 in conformity. This resulted in some confusion relating to the required content of DoC documents for in-scope products, in terms of references to the appropriate harmonised standard. At the time of writing, EN16480:2021 has been published, with its Annex ZA identifying its harmonisation with regard to Regulation 547/2012.

## Summary

Of the 13 products for which technical documentation was sought, formal non-compliances were identified in 12 out of 13 cases. The main source of formal non-compliance was in relation to missing technical documentation files or incomplete product information requirements (occurring in 12 of 13 cases) and with the Declarations of Conformity (occurring in 8 of 13 cases).

The only product subjected to laboratory testing was found to be compliant. There were issues with laboratory testing of two other products selected for testing as the laboratory did not have the apparatus to carry out testing on these variants. Our experience could indicate possible difficulties in procuring laboratory testing of certain types of water pump on the market.

Where non-compliance has been identified relating to technical documentation, in most instances, such non-compliances have been rectified voluntarily by the economic operators concerned, without the need for formal enforcement measures. Following engagement with the manufacturers and corrective actions being applied, 8 out of 13 products were deemed to have been brought into compliance and the cases were closed.

There remains a small number of manufacturers yet to fully demonstrate compliance with the product information requirements set out in the regulation. For these manufacturers, SEAI has engaged with the Market Surveillance Authorities for the respective countries where manufacturers are based and informed them of our findings.

An updated regulation covering water pump products is planned for Commission adoption in the first quarter of 2023. Further market surveillance of water pump products is envisaged upon introduction of this new regulation.



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