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NSAI Standards

Standard Recommendation
S.R. 50-4:2021

Building services - Part 4: Heat pump systems in dwellings

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Foreword

This document (S.R. 50-4:2021) is a Standard Recommendation and has been prepared by the National Standards Authority of Ireland Technical Committee 31: *Building services*, Sub-committee 6, *Heat pumps*.

This is the first edition of S.R. 50-4 and forms part of the S.R. 50 series of Standard Recommendations for building services. The series consists of the following parts:

— *Part 1: Water based heating systems in dwellings,*

— *Part 2: Thermal solar systems,*

— *Part 3: Water supply for domestic use within dwellings and their curtilages,*

— *Part 4: Heat pump systems in dwellings.*

In preparing this document the assumption has been made that the user has suitable knowledge and understanding of the subject.

Compliance with this document does not of itself confer immunity from legal obligations.

This document has been drafted in line with international standards practice. The following representation of numbers and numerical values apply:

— The decimal point is shown as a comma (,) throughout this document,

— Each group of three digits reading to the left or to the right of a decimal sign are separated by a space from the preceding digits or following digits respectively.

The following verbal forms are used:

— “should” indicates a recommendation,

— “may” indicates a permission,

— “can” indicates a possibility or a capability.

Information marked as “NOTE” is for guidance in understanding or clarifying the associated recommendation.

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— Heat Pump Association of Ireland

— IBEC

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— NSAI Electrical Installations Technical Committee

— Solas

— Tipperary Energy Agency

In drafting this document, a period of public consultation was undertaken. The National Standards Authority of Ireland also wishes to acknowledge the contributions made by the public during this period.

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Introduction

The Climate Action Plan 2019 (CAP 2019) charted a course towards ambitious decarbonisation targets. Detailed implementation maps for actions, including timelines and responsible organisations, were set out in the accompanying Annex of Actions.

The publication of this document is in support of CAP 2019 *Action 66: Roadmap to develop supply chain to support the phase out of fossil fuel boilers in new dwellings*.

Early review and consultation with relevant stakeholders supported a decision to extend the scope of this document to include existing dwellings.

The focus in this document is on the transfer of heat from a heat pump system to a dwelling and how the components of the heat pump operate to deliver this heat efficiently. The thermal performance and heat distribution system of a dwelling will have an impact on the success of a heat pump system, therefore designing and installing a heat pump system can involve more steps than for the case of a traditional heating appliance.

This document concentrates on the types of heat pump that are the most common to be installed in dwellings to provide space heating and/or domestic hot water.

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1 Scope

This document gives guidelines for the design, installation, commissioning, and maintenance of heat pump systems with an effective rated output up to 70 kW in new and existing dwellings.

This document is applicable to:

— heat pump systems that are intended to serve as the principal source of space heating of a dwelling and/or domestic hot water demand of a dwelling,

— heat pump systems which use the following sources for heat,

  — air,

  — water,

  — ground,

  — air being expelled from the same dwelling by a ventilation system,

— packaged heat pumps, split and multi-split heat pumps,

— heat pumps which are driven by electricity or heat, including absorption heat pumps,

— distribution systems suitable for heat pump systems.

This document does not give guidance on heat pumps used for the purposes of cooling and, it does not apply to heat pumps used in district heating or group heating schemes.

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