NSAI Standards

Standard Recommendation
S.R. CEN/TS 15406:2010

Solid recovered fuels - Determination of bridging properties of bulk material

S.R. CEN/TS 15406:2010

Incorporating amendments/corrigenda/National Annexes issued since publication:

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TECHNICAL SPECIFICATION

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CEN/TS 15406

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ICS 75.160.10

Supersedes CEN/TS 15406:2006

English Version

Solid recovered fuels - Determination of bridging properties of bulk material

Combustibles solides de récupération - Méthode de détermination des propriétés de formation de voûte dans les matériaux en vrac

Feste Sekundärbrennstoffe - Bestimmung der Neigung zur Brückenbildung von Schüttgut

This Technical Specification (CEN/TS) was approved by CEN on 12 June 2010 for provisional application.

The period of validity of this CEN/TS is limited initially to three years. After two years the members of CEN will be requested to submit their comments, particularly on the question whether the CEN/TS can be converted into a European Standard.

CEN members are required to announce the existence of this CEN/TS in the same way as for an EN and to make the CEN/TS available promptly at national level in an appropriate form. It is permissible to keep conflicting national standards in force (in parallel to the CEN/TS) until the final decision about the possible conversion of the CEN/TS into an EN is reached.

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Contents

Foreword

This document (CEN/TS 15406:2010) has been prepared by Technical Committee CEN/TC 343 “Solid recovered fuels”, the secretariat of which is held by SFS.

Attention is drawn to the possibility that some of the elements of this document may be the subject of patent rights. CEN [and/or CENELEC] shall not be held responsible for identifying any or all such patent rights.

This document supersedes CEN/TS 15406:2006.

CEN/TS 15406:2006 is not be converted into a European Standard as the test method specified in this document was not validated (see [1], [2]).

This document differs from CEN/TS 15406:2006 mainly as follows:

a) Figures 1 and 2 replaced by new examples of figures for a bridging apparatus;

b) dimensions of the shear tester changed;

c) automatic equipment allowed;

d) repeatability limit specified;

e) whole document editorially revised.

According to the CEN/CENELEC Internal Regulations, the national standards organizations of the following countries are bound to announce this Technical Specification: Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland and the United Kingdom.

Introduction

This Technical Specification describes the determination of bridging properties of solid recovered fuels (SRF), which is conveyable in a continuous material flow. Bridging or arching is a complex parameter describing the situation when particles form a stable bridge over an opening that can be several times the length of the single particles. Bridging is dependent on several influencing factors, e.g. the conveying or transport system, particle size and shape, moisture content, bulk density, bed depth.

The behaviour of SRF in bins, hoppers, feeders, and other handling equipment depends on bridging properties [3]. Knowing these properties, already in phase of product development, is essential for avoiding flow problems.

Bridging properties are also important for quality control. By checking the relative bridging properties of a given bulk solid before it is placed into a system, unsatisfactory batches can be rejected or recycled, thereby preventing costly handling problems downstream.

Bridging is not an absolute value and therefore there is a need for standardising the conditions for the determination of bridging tendency in order to gain comparative measuring results.

Bridging of solid recovered fuels is subject to variation due to several impacts such as filling layer, particle shape, and storage time in silos. Measured bridging values can therefore deviate from real conditions in silos and conveyer systems.