

Introduction

The previous edition of the British Standard covering rock salt did not contain, or define, a reproducible test for the chemical analysis of salt. The assessment of the soluble sulphate content of salt has caused particular problems. Much testing has been carried out both by Highways Authorities and the salt supply industry and a solution time of 2h, without crushing, has given the most reproducible results for what is a naturally occurring material with a natural variation in composition. The amount of sulphate found in the test solution is time-dependent and the requirement for the maximum allowable soluble sulphate content has been fixed to equate with the previous edition where a shorter dissolution time was often used.

Scope

The British Standard BS 3247:2011+A1:2016 specifies the essential properties of salt for spreading on highways for winter maintenance and includes tests for certain of these properties. Marking requirements are also specified.

Definition

For the purposes of the British Standard, the following definition applies: Friable – capable of being easily crumbled between the fingers of the hand and restored to the original grading.

Storing Quality

The salt shall contain the minimum amount of anti-caking additive necessary to ensure that the bulk remains loose after open storage for 18 months in an unprotected stockpile at least 1m high with sides inclined at the angle of repose of the salt in a loose and usable condition. In these conditions, any non-friable crust formed shall not exceed 75mm in thickness.

NOTE: An important consideration in choosing a site for a stockpile is its potential effect on the environment. Stockpiles should preferably be on well-drained sites and precautions should be taken to ensure that the salt does not constitute a nuisance to human beings or a hazard to animals (including fish) or plant life.

Moisture Content

The moisture content of the salt on delivery shall not exceed 4%

Grading

The salt shall comply with the requirements given in table 1. Salt shall be graded as either coarse or fine according to the results of the sieve analysis. NOTE: Compliance with the requirements for grading ensures the suitability of the salt for spreading for the treatment of snow and ice but does not, of itself, ensure free running or non-caking properties Spreaders may need to be adjusted and calibrated when changing the grade of salt.



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Brown Rock Salt

Table 1: Grading of Salt (rock salt)

| Grade of salt | Sieve test | Percentage % passing test sieve |
|---------------|------------|---------------------------------|
| Coarse | 10mm | 100 |
| | 6.3mm | 75 – 85 |
| | 2.36mm | 30 – 70 |
| | 300µm | 0 - 20 |
| Fine | 6.3mm | 100 |
| | 2.36mm | 30 – 80 |
| | 300µm | 0 - 20 |

Chemical Composition

The chemical composition of the salt by dry mass shall be as follows:

- (a) Soluble chloride compounds (including sodium chloride (NaCl), magnesium chloride (MgCl₂), calcium chloride (CaCl₂) etc expressed as sodium chloride): not less than 90.0%
- (b) Soluble sulphate compounds (expressed as calcium sulphate (CaSO₄)): not more than 2.5%
- (c) Material insoluble in water (at 20 ± 2°C): not more than 7.5%

NOTE: In addition to the above requirements, no substances should be present in such an amount as to be a hazard to human beings, animals (including fish) or plant life under normal conditions of use of the salt.

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