Salt Specification

1. Supply of salt

Salt shall be fully compliant with BS 3247:2011 “Specification for salt for spreading on highways for winter maintenance”. Alternatives may be considered, upon approval.

Grade

Grading of the salt should be as per Table 1, below.

BS 410 test sieve	**Percentage (*m/m*) passing test sieve**
6.3 mm	100
2.36 mm	30 to 80
300 µm	0 to 20

Table 1 – Grading of salt. (BS 3247:2011)

Moisture content

The moisture content of all supplied salt shall be in accordance with BS3247:2011, and when sampled and tested on delivery shall not fall outside the optimum range identified in table 2.These moisture content values shall be consistent and representative of each delivered load. Alternative moisture contents may be considered, upon receipt of written request for approval.

Salt Type	Technology	Optimum Range
UK Rock Salt. Maximum fines content (<0.3mm particle size) is less than or equal to 7.5%	Dry Salting	1.5 to 4%
UK Rock Salt. Maximum fines content is above 7.5%	Dry Salting	2 to 4%

Should moisture content rise above 4%, the effectiveness of the salt is greatly reduced, therefore consideration must be made for increasing spread rates to compensate.

Chemical composition

The chemical composition of all salt supplied shall be in accordance with BS3247:2011and as such, the following analysis upon delivery shall be as follows:

- Soluble chloride compounds (including sodium chloride (NaCl), magnesium chloride ($MgCl_2$), calcium chloride ($CaCl_2$) etc. expressed as sodium chloride): not less than 90%.
- Soluble sulphate compounds [expressed as calcium sulphate ($CaSO_4$)]: not more than 2.5%
- Material insoluble in water (at 20 ± 2ºC): not more than 7.5%
- 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.

Alternative chemical compositions may be considered, upon approval.

Anti-caking additive

The minimum amount of anti-caking additive shall be used in order to prevent degradation of the quality of the salt and also ensure that after 18 months of covered/sheeted storage, all salt within a stock pile of at least 1 metre in height and the correct angle of repose shall remain loose and useable.

Full sampling and testing of the salt shall take place upon delivery as per the requirements of BS EN 932-1:1996 and BS 3247:2011. As such, the following test suite shall be completed, and results passed on to the Employer or its representative:

- Particle size analysis
- Moisture content analysis
- Concentration of anti-caking additive
- Chloride content

Samples taken for testing should be as representative as is practicable, (in accordance with BS EN 932-1:1996), and three test suites per shipment should be undertaken. This sampling and testing shall be undertaken at the Team Manager Quarry’s cost.

2. Salt storage

Storage shall be provided for the purposes of stockpiling salt for a duration to be agreed between the Team Manager Quarry and the Service Manager Roads and Grounds or a duly appointed representative.

Consideration shall be given to the following:

1. Access. The Storage Site shall be readily accessible by public highway. The storage site shall be accessible by any sized articulated lorry permitted to be used on public highway (without special order), with sufficient turning space provided. Consideration shall be given to the possibility of queuing vehicles.
2. The storage site shall be accessible on all days (with access provision on public holidays to be discussed between the Team Manager Quarry and the Service Manager Roads and Grounds or a duly appointed representative) between the hours of 05:30am and 18:30pm.
3. The storage site shall have a hard standing on all areas to be used for the stockpiling of salt. The hard standing shall be in good condition and shall not allow leachate from the salt stockpile to permeate the ground beneath.
4. Where the storage site is not directly on the coast, it shall have sufficient bunding to prevent leachate and run-off from the salt stockpile from polluting the surrounding environment.
5. The storage site should have interceptors to contain the leachate and run-off from the stockpile and other pollutants. Where interceptors are not present, a consent to discharge chlorides to the foul sewer network shall be provided to the Service Manager Roads and Grounds or a duly appointed representative.
6. The storage site shall have a secure boundary wall or fence to prevent any unauthorised access and any security issues arising from the use of the site for salt stockpiling.
7. The storage site should have provision for weighbridge facilities. The ticketing output from such facilities shall allow for the collection of information relating to:
    - Origin
    - Destination
    - Load (mass)
    - Customer
    - Haulier
    - Time and date

    The Team Manager Quarry shall provide resources to staff such weighing facilities.

    The weight of all salt material extracted/removed from the storage site is to be obtained by the Team Manager Quarry.

    The Team Manager Quarry shall make available within 24 hours of receiving a request, provision for the reloading of vehicles making dispatches from the storage site. This shall include making available loading shovels and associated resources to be able to dispatch salt. Similarly, such provision shall be made available within 24 hours of receiving a request, for the stockpiling and profiling of salt delivered to storage site.

8. It is preferable for the salt to be stored within a building such as a salt barn or other suitable structure in order to protect the salt from the effects of the weather
9. All sites shall have requisite environmental and planning consents for the bulk storage of salt. These shall be sought by the Team Manager Quarry at their cost.

3. Sheeting

Where enclosed 'roofed' storage is not available, waterproof sheeting shall be provided and installed to protect the salt from the elements and the effects of leaching, run-off, and wind. Sheeting shall be of sufficient quality to protect the salt stockpile for two years but shall be maintained during that period.

The Team Manager Quarry shall ensure that sheeting shall be weighted down sufficiently so as to prevent the sheeting from coming free or blowing off. Any damage to sheeting caused by weather shall be repaired or replaced as soon as is practicable at the Team Manager Quarry's cost.

The working face of each stockpile shall also be re-sheeted following stock removal or addition. The sheeting that is cut away at the time of excavation as well as off cuts from the installation process shall be disposed of efficiently and in a way, which minimises environmental impact.

Any material used for sheeting shall be designed specifically for the purposes of protecting bulk materials from wet conditions.

4. Transportation of salt

Once the salt has been stored, the Team Manager Quarry shall deliver salt as and when instructed in the OIC Winter Service Policy requirements from each of the locations to destinations specified by the Service Manager Roads and Grounds or a duly appointed representative. Vehicles transporting the material shall be fit for purpose to prevent loss of salt material or contamination to the salt material. Proof of delivery receipts shall be collated by the Team Manager Quarry from hauliers and provided to the Service Manager Roads and Grounds or a duly appointed representative by email within one week of dispatch.

5. Additional testing of supplied salt

The following test suite shall be available to the Service Manager Roads and Grounds or a duly appointed representative for the testing of any salt stockpile. Analysis shall be undertaken in accordance with BS3247:2011. Once analysis has been completed, results in the form of test certificates shall be passed on to the Service Manager Roads and Grounds or a duly appointed representative.

- Particle size analysis
- Moisture content analysis
- Concentration of anti-caking additive
- Chloride content

The Team Manager Quarry shall be responsible for the representative sampling of the stockpile to be sampled and will sample in accordance with BS EN 932-1:1996, as well as for the arrangement of courier services to transport test samples to the testing facility.

Additional analysis will be carried out monthly, during the winter season, from October to April.

6. Management of Storage Sites and provision of a logistics service

The Team Manager Quarry shall provide on-site resources (at the storage site) to monitor dispatches and deliveries and supervise the condition and security of the stockpile. On-site resources (the site supervisor) shall be provided during the operational hours at each storage site. Operational hours shall be defined as days of expected delivery and dispatch. In addition, the site supervisor shall undertake inspections of a frequency to ensure maintained security, quality of the salt and sheeting (site specific), and health and safety requirements of the storage site, the salt stockpile and the condition of the sheeting. Such inspections shall not be any less frequent than weekly and shall be carried out at all times throughout the year, irrespective of whether operational hours are affected.

The Team Manager Quarry shall, at the request of the Service Manager Roads and Grounds, provide the following logistic service:

- Arranging distribution and advising distributors/receiving authorities of what loads are to be delivered and when
- Ensuring distributors book vehicles in and providing them with unique loading reference
- Monitoring vehicles arriving at stockpile for loading
- Managing daily collection of weighbridge tickets at stockpile
- Collecting and collating all Proof of Deliveries (PODs).

Reports on deliveries and dispatches taking place from the storage site shall be prepared on request for the Service Manager Roads and Grounds or a duly appointed representative. Such reports shall include elements relating to site security, sheeting condition, health and safety, environmental concerns and any other matters deemed relevant.

Salt will be supplied to Roads and Grounds by the Team Manager Quarry at Curister Quarry. In addition, the Team Manager Quarry will maintain a standby rota during the winter period.