

MICROSILICA SEAL®

UNIVERSAL IMPEX

Microsilica Seal® CEMENTING REDEFINED



Improvement in strength and durability of cementing



Universal Impex
Sky is the limit ...

UNIVERSAL IMPEX MATERIALS GUIDES YOU HOW TO USE OF UNIVERSAL IMPEX MICROSILICA SEAL.

Universal Impex Microsilica Seal is a mineral additive that improves the properties of both fresh and hardened cementing. Universal Impex Materials has long experience in the use of Universal Impex Microsilica Seal in cementing, and can offer a total package to the user. This package includes advice and guidance in the manufacture of cementing for various purposes and in the necessary equipment, as well as training in the use of Universal Impex Microsilica Seal and technical assistance in the development of new applications. The purpose of this publication is to introduce benefits of Universal Impex Microsilica Seal and to give general guidance for its proper use as an additive.



Universal Impex



HISTORY.

Universal Impex Microsilica seal is a pozzolan. Pozzolans have been used from ages. Ancient Egyptians and late Mughals used cements made from volcanic ash that had pozzolanic properties. The Taj Mahal is just one example of the durability and lasting strength of such ancient cementing structures. Universal Impex Microsilica Seal, because of its fineness and high reactivity, is a particularly valuable pozzolanic material. Thus it finds widespread use in the production of quality cementing.

THE PRODUCTION OF UNIVERSAL IMPEX MICROSILICA SEAL.

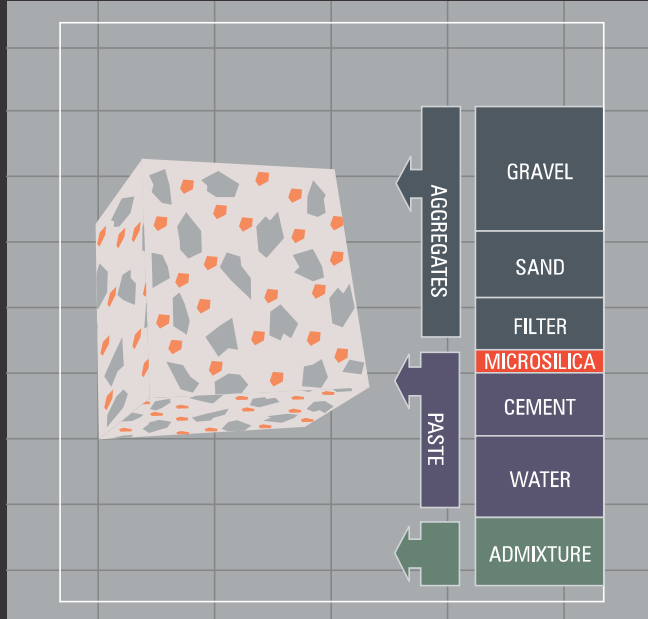
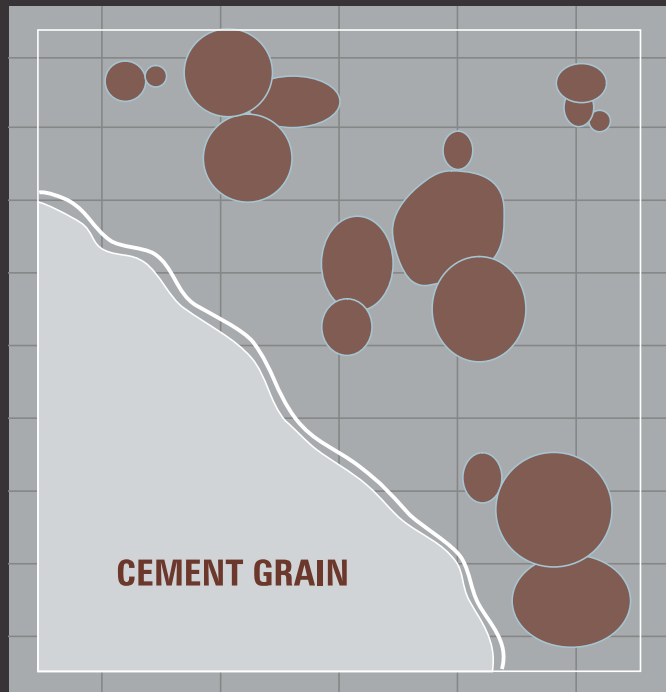
Universal Impex Microsilica Seal is manufactured in silicon and ferro-silicon smelting plants. Universal Impex Microsilica Seal has a bulk density of 200-300 kg/m³ from the furnace. In this form the material is difficult to handle, store and transport. Therefore it is usually processed further by densification or by slurrification. In the densification process, the bulk density of the material increases to more than double the original value. The other main form of delivery is as a water-based slurry, where, at 50% dry content, one cubic meter of slurry will contain about 700 kg Universal Impex Microsilica Seal.



Universal Impex
Sky is the limit ...

THIS IS UNIVERSAL IMPEX MICROSILICA SEAL.

Universal Impex Microsilica seal contains 85-98% amorphous silicon dioxide (SiO_2) in the form of microscopic spherical particles. The average diameter of these particles is 0.10 – 0.15 micron; this is about the same as particles in cigarette smoke. A consequence of the diminutive particle size is that Universal Impex Microsilica seal has a specific surface area which is about 100 times that of cement. The large surface area and the high content of amorphous silicon dioxide gives Universal Impex Microsilica Seal superior pozzolanic properties. Since the silicon dioxide in Universal Impex Microsilica seal is present in an amorphous, not a crystalline state, Universal Impex Microsilica is not considered to be hazardous to health.



WHAT IS CEMENTING?

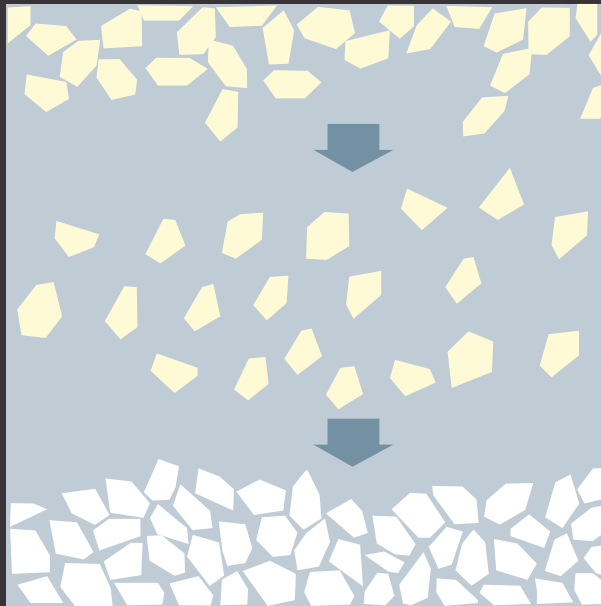
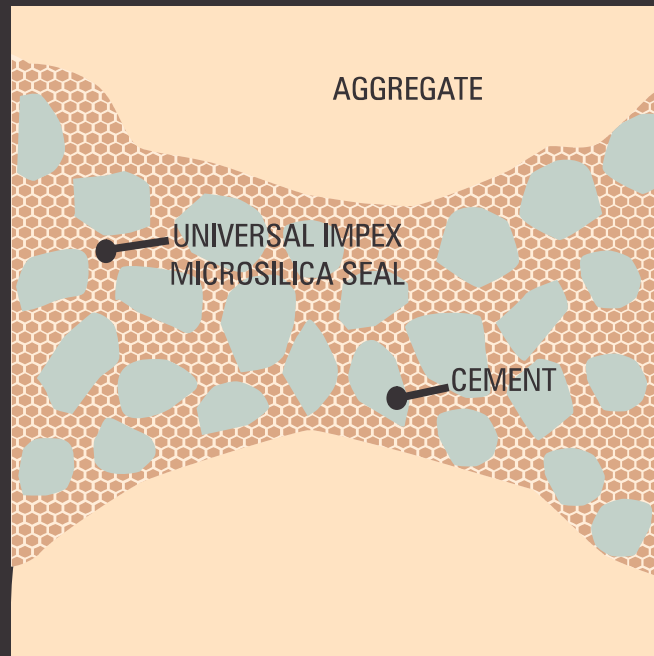
Cementing is the most widely used construction material today. About 1 m³/year is used for every man, woman and child on the planet. This universal acceptance follows from its basic properties: it is easy to shape, it is readily available locally, and it has strength and durability. cementing contains cement, water, aggregates (sand and gravel), chemical admixtures and mineral additives. Universal Impex Microsilica Seal is a mineral additive that gives superior properties to cementing.



UNIVERSAL IMPEX MICROSILICA SEAL FILLS THE GAPS IN cementing.

One of the basic principles of cementing technology is the need for proper packing of the particles. The purpose is to obtain the smallest possible volume of empty or water-filled space in the material. The tiny particles of Universal Impex Microsilica seal help the particle distribution and the packing of the system.

Very strong surface forces act between the particles of Universal Impex Microsilica seal. These forces may prevent proper dispersion of the particles in the fresh cementing. Accordingly, dispersing admixtures are value components of Microsilica seal cementing.



WATER REDUCING ADMIXTURES.

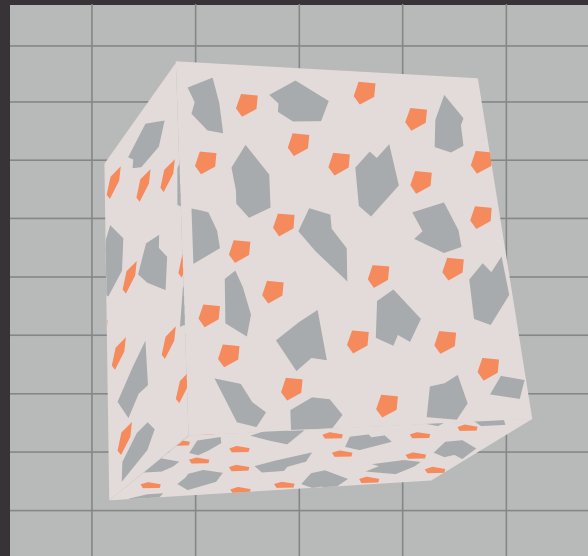
Good workability of a cementing often requires more water than needed for hydration of the cement. The excess water creates voids in the cementing. Water reducing admixtures make it possible to reduce the amount of excess water. These chemicals reduce the interparticle forces and make the particles more mobile and more densely packed.

Such admixtures are essential to the manufacture of high performance cementing, including cementing with Universal Impex Microsilica seal.



QUALITY CONTROL OF CEMENTING WITH UNIVERSAL IMPEX MICROSILICA SEAL.

The quality of cementing with Universal Impex Microsilica Seal is maintained with the same tools and procedures as the quality of conventional cementing.



UNIVERSAL IMPEX MICROSILICA SEAL MATERIALS – WORLD'S ONE OF THE LEADING MICROSILICA SUPPLIER

Universal Impex Materials markets Universal Impex Microsilica Seal, an ultrafine powder created during the production of ferrosilicon and silicon metal. Microsilica Seal is today used in prestigious projects throughout the world wherever cementing durability is the prime concern. One priority was that the products and services promoted should contribute to raising environmental standards through out the countries it operates in. This emphasis continues to be maintained as Universal Impex continuously focuses on:

EXCELLENCE INNOVATION QUALITY

With its advanced research and development facilities, Universal Impex Materials are committed to further improvements in new product technology and in developing new solutions and product improvements for our customers. This commitment is consistent with Universal Impex Materials' role in protecting our environment, which will continue to remain a main focus of the company.



UNIVERSAL IMPEX A WORLD CLASS PRODUCER

Universal Impex is one of India's largest industrial companies. Many of today's most essential technical devices and consumer goods have components which contain Universal Impex products. These products maintain the highest quality standards and are in demand in a steadily growing market. Universal Impex main products are Microsilica Seal, Cenosphere, Metakaolin , Silicon Microsilica, ferroalloys, silicon meta land aluminium . Universal Impex production facilities provide the world market with a wide range of metals and materials through 5 sales offices in 3 countries. Universal Impex is one of the largest producers of Microsilica seal in the world, particularly with respect to Silicon Microsilica.



UNIVERSAL IMPEX MATERIALS – AT YOUR SERVICE

Universal Impexl Materials is India's largest supplier of microsilica Seal and we are the leader in marketing and implementing microsilica Seal technology worldwide. We also actively participate in international development of technical and quality standards. Universal Impex Materials offers a total package to our customers. This includes advice and guidance with respect to materials handling and technical assistance in the manufacture of high performance cementing for a variety of applications. To our customers Universal Impex Materials stands for a reliable supply of quality-assured Universal Impex Microsilica Seal, either through our sales offices or through local representatives. Years of research and practical use have led to Universal Impex Microsilica Seal becoming a key component for the enhancement of cementing properties such as:

- Improved pumpability
- Less segregation
- Increased strength
- Reduced permeability to water and chlorides
- High sulfate resistance
- Better protection of steel reinforcement.

Universal Impex Microsilica Seal is now used in more and more projects wherever durability is the prime concern.

DISCLAIMER:

The information given is based on many years of research and field experience and is accurate to the best knowledge of Universal Impex. However, due to the numerous factors that can affect the performance of a cementing, with or without microsilica seal[®], Universal Impex Materials offers this information without guarantee and accepts no liability for any direct or indirect damage from its use.

