

# Revolutionary concrete product achieves greater strength with half the volume

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An improved concrete product known as PrimeComposite has taken the global market by storm; with impressive reductions in volume required compared with traditional concrete, as well as superior mechanical properties, it offers environmental, structural and economic benefits in one package.

Concrete, because of its strength and durability, has been a mainstay of construction for thousands of years. The problem is that, while it is very strong, it is not particularly efficient and it is no friend to the environment; the [cement industry](#) is one of the primary producers of CO<sub>2</sub> worldwide. The material is also prone to cracking as it dries, a feature which significantly reduces the lifespan of [concrete](#) structures and makes them less aesthetically pleasing.

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In recent years, however, the market has changed thanks to an innovative product developed by a consortium of partners from Belgium and Latvia. It all began with research conducted by the University of Latvia's Institute of Polymer Mechanics, which suggested that randomly-dispersed fibres scattered in a special, improved concrete mixture would allow it to bear double the load of other concrete. Latvian SME Primekss Ltd, an expert in concrete coverings, saw an opportunity here to develop a new, more efficient product that might fill a gap in the market.

## Making ideas concrete

With the help and support of the EUREKA Network, Primekss and the Institute of Polymer Mechanics joined forces with Belgian SME Sprl Xavier Destree to engage in INNODISP CONCRETE, a project that ran between 2008 and 2010 with €230,000 in funding. Its aim was to create an improved concrete that could achieve the same construction goals as regular concrete when 20% less was used – but in practice, the researchers achieved even better with a 50% reduction in volume. On top of this, the new product – PrimeComposite – reduces and often eliminates the need for joints, which are always a weak spot in concrete constructions. It is also lean, crack-free and immune to shrinkage.

As project leader, Primekss played a significant part in the day-to-day activities on INNODISP CONCRETE, as CEO Janis Ošlejs recalls: "Our role was to work together with the other partners to come up with systems and recipes for making better concrete – as well as providing a place for field tests and application of the product." Although this work had its share of challenges, it resulted in lasting partnerships that persist today, and big changes for the SMEs involved. "Primekss is far more successful than it used to be," Ošlejs enthuses. "The project has directly created at least 40 jobs since 2010."

But the biggest success story is in the product itself, which continues to exceed competitors and has achieved sales of more than €100m to clients throughout Europe, South Africa, Kazakhstan, the USA, India, Russia and many other countries. Going forward, Primekss will further investigate and develop the impact of its innovative material – and it will facilitate this goal by applying, once again, for EUREKA funding.

"EUREKA has been a very important part in the success of this project. Its support and funding have helped us focus on the development of the product, and we are really grateful to the Network for this assistance."

Provided by Eureka

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