

**Facility:**  
Makarovsky Kvartal residential estate

**Location:**  
Yekaterinburg, Russia

**Date:**  
2017–2019

**Customer:**  
UGMK Zastroyschik

**Designer:**  
Arkhproekt

**Contractor:**  
GK Astra

**Used materials:**  
MasterSeal 754 – over 12,000 m<sup>2</sup>  
MasterSeal Base 2100 (based on  
MasterSeal M 800 membrane) –  
over 5,000 m<sup>2</sup>  
MasterSeal 550 – over 5,000 m<sup>2</sup>  
MasterSeal 930 / 933 – over 1,500 m<sup>2</sup>

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## Makarovsky Kvartal residential estate MasterSeal



Our reference in Yekaterinburg (Russia): Makarovsky Kvartal residential estate. Photo [www.ugmk.com](http://www.ugmk.com)

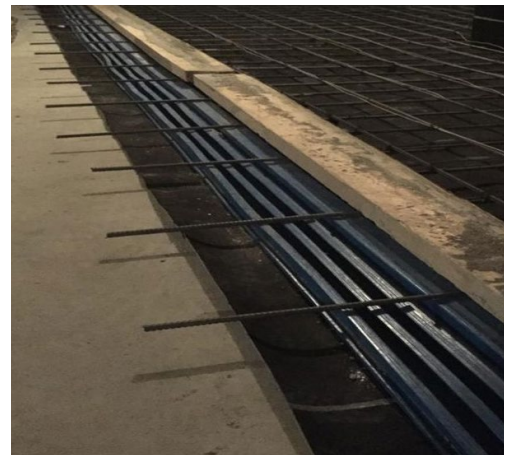
### Facility Description:

Makarovsky Kvartal Residential Estate — is a multifunctional facility comprising several premium class and business class buildings (9–27 stories). This is a highly comfortable estate with a two-level underground parking lot and various infrastructure facilities. Makarovsky Kvartal is located in the city center at Olimpiyskaya Embankment. It is the first facility of its scale in Russia where the foundation was waterproofed by an entirely new type of material ensuring total protection against subsoil water. Furthermore, the material allows installing structural slabs in winter time.

### Objectives and Requirements:

The specific feature of the facility is its location, as it is built at a 50 m distance from the Iset river. The bases of two-level underground

parking lots in all buildings are at a level of -11 m, i.e. at a depth equal to the depth of the Iset bottom. Under such complex hydrogeological conditions there is a very high probability of subsoil water penetration. Thus, the most efficient waterproofing materials were required so that their integrity does not depend on the base moisture content and the conditions during their installation. Traditionally used torch on bitumen waterproofing materials were unable to meet such a requirement, while the use of polymer membranes having no adhesion to the structure may have resulted in major leaks. Concrete in the foundation of the first stage buildings was placed at a temperature below -10°C, thus the installation of waterproofing without leaks posed a serious challenge for the contractor.



# Makarovsky Kvartal residential estate

## MasterSeal



### Solution:

A new material was proposed for the underground parking lot waterproofing, MasterSeal 754 a pre-applied sheet membrane on flexible thermoplastic polyolefin (FPO) base. It ensures complete adhesion to concrete surfaces and does not require protection screed. Non-woven needled fleece provides a durable mechanical bond, and the FPO waterproofing layer's properties guarantee efficient protection against subsoil water. Furthermore, MasterSeal 754 demonstrates high mechanical impact resistance, high chemical resistance to aggressive media in subsoil water, and it is capable of withstanding constant pressure even in foundations at a depth of over 15 m for at least 100 years\*.

The offered solution provides for creation of integral, lasting and mechanically strong protection cover throughout the outer foundation surface at lower cost while guaranteeing installation time and labor savings. Installation works may be carried out irrespective of the foundation moisture degree. Thus, the material may be installed in the winter time without violation of process requirements.

A waterproofing system based on MasterSeal M 800 hot spray applied polyurethane membrane was proposed for waterproofing of the underground parking lot roof slab. MasterSeal M 800 hot spray applied membrane application ensures adhesion to the substrate on the entire surface without seams and no mechanical fastening is required irrespective of the substrate complexity. Thus, there will be no water migration under the waterproof coating even in case of its local damage. The waterproofing system may be applied in a fast manner (up to 500 m<sup>2</sup> per day). Furthermore, due to high water vapor permeability the system may be applied to surfaces with high residual moisture content, mitigating risks related to installation deficiencies. The waterproofing system may be used under various weather conditions.

Thus, an integrated solution was provided ensuring total adhesion of the waterproofing material throughout the entire concrete surface to guarantee protection against leaks even under such complicated conditions.

\* — based on a conclusion on determination of the estimated service life (AO TsNIIPromzdaniy methodology).

### Advantages for Customer:

- Cooperation with Bau Engineering, a proven contractor, guaranteed the required results for the customer.
- High professionalism and extensive experience of Master Builders Solutions personnel made it possible to choose the right solution and to take into account the customer's specific requirements.

### Key Project Facts and Figures:

- The first stage of construction includes three buildings (162 apartments), a gym (3,500 m<sup>2</sup>) and an underground parking lot (173 slots).
- Works have been carried out at the entire foundation of the first stage buildings at Yekaterinburg facility (6,000 m<sup>2</sup>).



### About Master Builders Solutions

The Master Builders Solutions brand brings all of our expertise together to create chemical solutions for new construction, maintenance, repair and renovation of structures.

Master Builders Solutions is built on the experience gained from more than a century in the construction industry. The know-how and experience of a global community of construction experts form the core of Master Builders Solutions. We combine the right elements from our portfolio to solve your specific construction challenges.

Further information is available at:

[www.master-builders-solutions.ru](http://www.master-builders-solutions.ru)