



DRAINTUBE®



GEOCONDUCT®



ALVEODRAIN®



NOTEX C®



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MINING
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Radon Gas Mitigation Sub-slab Depressurization

CONTEXT

Radon is a naturally occurring radioactive gas. It is produced when uranium, thorium and radium break down in soil, rock and water. It is then released into the air. Radon is odorless, tasteless, and invisible. Radon can accumulate in some places where ventilation is inadequate, such as in an underground mine. It can also build up inside buildings. Long-term exposure to high levels of radon can be dangerous to human health. Radon gas can damage cells in lungs, which can lead to cancer. Radon is responsible for about 21,000 lung cancer deaths each year in the United States, though it usually takes 5 to 25 years to develop.

ISSUES

Traditionally, the mitigation of the radon gas is achieved by a Sub-slab Depressurization (SSD) system and composed of a 100 - 150 mm (4 to 6 in.) thick granular drainage layer on top of a separation geotextile and covered by a vapor barrier. One or more Radon pits are located according to the gas concentration in the area and to the geometry of the building. Because most of the SSD systems are constructed in high-density population areas (e.g. new construction in old industrial zones), the truck traffic and the noise resulting from the excavation works and the transportation of granular material is a nuisance for local residents. It also damages the local road network that is not designed to handle heavy vehicles traffic.

RETAINED DESIGN

Installed below the vapor barrier, the multi-linear drainage geocomposite DRAINTUBE GAS is used as part of the SSD system, replacing the granular drainage layer and separation geotextile. It exhibits the following properties:

- Non-woven geotextile layers needle-punched together with 25 mm (1 in.) diameter perforated mini-pipes regularly spaced on 2 m (80 in.) centers and running the length of the roll
- Mini-pipes with a stiffness at 5% deflection over 3,000 kPa (435 psi)
- Stable long-term drainage capacity even under high loads

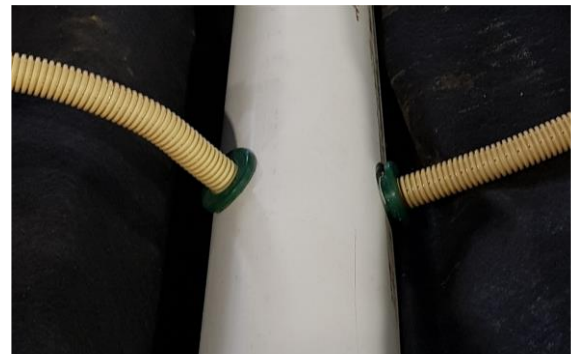
DRAINTUBE® is mechanically connected to the exhaust pipes using the Quick Connect system. It reduces pressure losses and improves the overall SSD system performances. Quick Connect System is compatible with active SSD.

ADVANTAGES

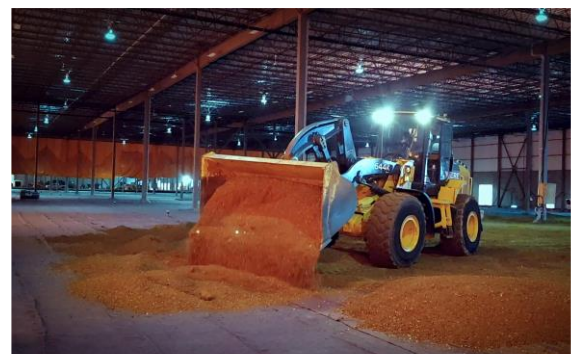
- Approved solution for passive and active SSD systems for Radon Gas Mitigation
- Reduction of the social footprint (less truck traffic and less noise for the neighborhood)
- Reduction of the environmental footprint (85% less GHG emissions compared to the use of granular drainage material)
- Costs saving (no polluted soil to excavate i.e. no fees for polluted soil disposal)
- Very good Health & Safety records for the installation crew on site



Installation of DRAINTUBE GAS as part of the Sub-slab Depressurization System (SSD).



Connecting the DRAINTUBE® mini-pipes to the collector pipe using Quick Connect System. Compatible with active SSD.



Backfill on the DRAINTUBE® / Vapor Barrier system using lightweight equipment if the layer is less than 300 mm (12 in.)

PROJECT SUMMARY

Products	DRAINTUBE GAS + Quick Connect System		
Quantity	Warehouse projects over 60,000 m² (660,000 sq ft)	Design	Various
Application	Subslab Depressurization (SSD) system	Installation	Various
Owner	Various	Years	Since 2014



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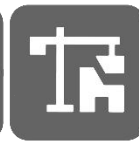
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AFITEX-TEXEL GEOSYNTHETICS ADDED VALUE

The expertise of the AFITEX-TEXEL team provided the designers with all the necessary information and technical support to choose the most suitable solution based on the project's parameters.

« What AFITEX-TEXEL has to offer »

AFITEX-TEXEL will be pleased to assist you in the evaluation and design of your next projects, because our approach has always been and always will be the same: the right product, in the right place, well installed with rigorous quality control.

In case you need technical support? Feel free to refer to the AFITEX-TEXEL team. Expert services will be provided free of charge:

- Technical Assistance
- Assistance during Design
- Technical Training
- Technical Documentation
- Calculation Tools
- Specification & Tender documents
- Installation Guidelines



Commercial Warehouse Building in a Radon Gas sensitive area in Edmonton, Canada



YOU NEED MORE INFO?

Never hesitate to contact one of our specialists in order to know more about the benefits you can get from your projects

1-800-463-0088

Available documentation

- Technical data sheets
- Installation guidelines
- Standards & Studies
- List of projects
- Design Software

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