

Foundations & Retaining Walls

Commercial Buildings

Insulated Concrete Forms

Planters

Plaza Decks

Beneath Slabs

Underground Parking

Lagging Walls

Blind Forms

Roof Gardens

Wood Structures

Enkadrain®

Drainage & Waterproofing Systems



The thin line between comfort and catastrophe™

Enka-Engineered
BUILDING PRODUCTS

COLBOND

Multiple benefits of Enkadrain:

- **highly flexible - conforms to all surface shapes**
- **proven and predictable flow rates**
- **longer and wider rolls reduce installation costs**
- **no core overlap required - fabric overlap for easier seaming**
- **protects waterproofing during and after backfill**
- **continuous flow even under high loads**
- **fabric provides excellent bonding surface for shotcrete**

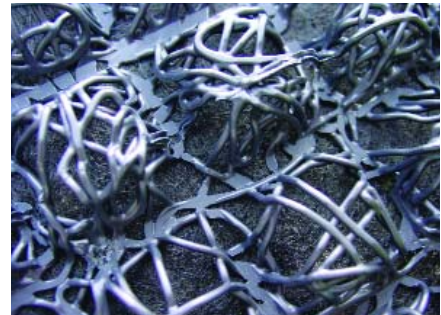
drainage

Enkadrain has successfully been draining soil in countries all over the world for years. Beginning in Europe with our first hydrostatic pressure relief system more than 25 years ago, our family of drainage products has grown to meet the demands of the rapidly changing construction market. As building designs have become more complex, architects and engineers have been called upon to work more creatively with materials that add value and save resources. Always innovative and on the cutting edge of technology, Colbond Building Products has now added a complete line of geocomposite drains made from recycled polymers that contribute to the LEED program.



Environmentally Friendly Enkadrain

Enkadrain 3000R Series products are a new generation of the Enkadrain family. These new drainage composites are made of a post-industrial recycled polypropylene drainage core of fused, entangled filaments and a geocomposite fabric bonded to one or two sides. These products can contribute up to 2 LEED points when used in conjunction with other recycled content products.

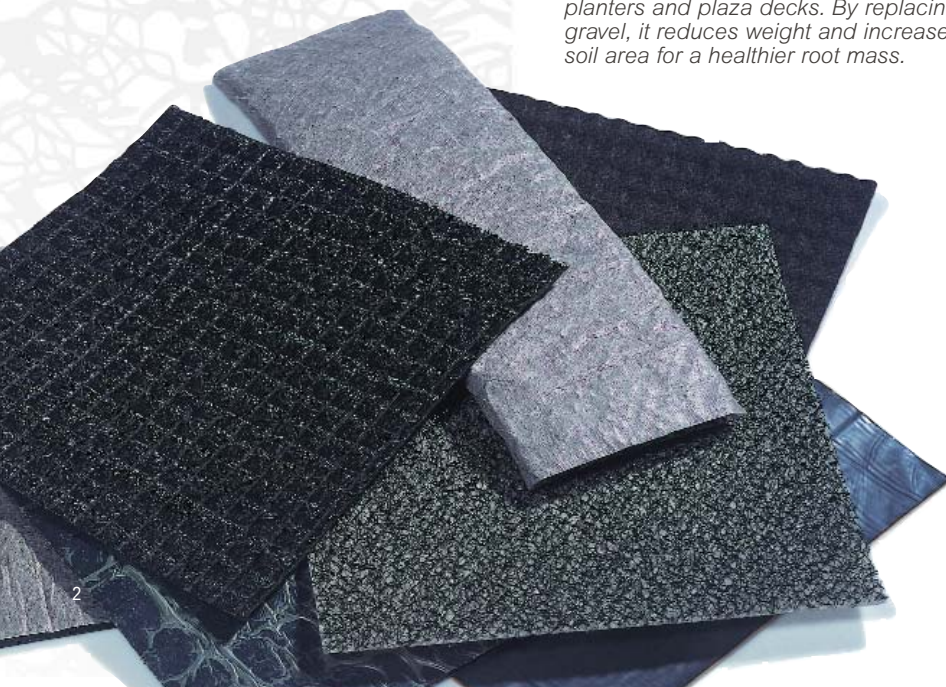


The polypropylene core delivers flow rates that exceed the original HDPE (High Density Polyethylene) Enkadrain.



Enkadrain offers excellent drainage for planters and plaza decks. By replacing gravel, it reduces weight and increases soil area for a healthier root mass.

A family of three-dimensional, multilayer drainage products consisting of a core of fused, entangled filaments and one or two nonwoven geotextile fabrics attached. Designed to relieve hydrostatic pressure from soils abutting below grade structures, Enkadrain provides a lightweight alternative to traditional sand and gravel drains. The geotextile filter fabric allows water to pass through to the polymeric core as it retains the surrounding soil. Ground water is then channeled through the Enkadrain core to a perforated pipe, weep hole or other discharge system before it ever reaches subsurface walls - keeping the structure dry.



Three Unique Systems each with a 20 Year Warranty

Enkadrain SubSeal Waterproofing & Drainage System® - High-performance waterproofing membranes with a 3000R Series Enkadrain.

Enkadri & Drain BTM® - One-Step waterproofing and drainage.

Enkadrain® 3000R Series - Enkadrain 3611R / 3811R / 3615R used with a conventional waterproofing membrane.



Patented Waterproofing Membrane System

Enkadri Pour & Proof combines a reinforced bitumen membrane and a grab layer geocomposite. This unique hybrid system is designed to waterproof lagging walls, concrete slabs, and blind side applications with a sheet membrane and no primer.



One-Step Waterproofing and Drainage System

Capable of providing moisture protection, relieving hydrostatic pressure, and filtering soil all in a single product, Enkadri & Drain is a most attractive solution for keeping your structure dry. The self-adhesive waterproofing membrane seals tightly to the foundation wall preventing water from penetrating into concrete, block, or insulated concrete forms while the geocomposite drain prevents the build-up of hydrostatic pressure and allows water to pass to an evacuation system. The filter fabric holds back soil particles keeping the evacuation drain free of silt and sand. This product is designed for use on vertical walls with any soil fill up to 20 feet in depth (under many conditions greater depths can be achieved).

waterproofing

Enkadri & Drain:

- flexible for easy installation
- no protection board needed
- simple seaming
- one-step installation requires less labor than traditional systems
- no aggregate backfill needed



Enkadrain is available in a variety of widths, thicknesses, and components.



Roof gardens offer multiple environmental benefits and are visually appealing.



Global Leaders in Green Roof Components

Colbond Building Products has developed relationships in North America with the fastest growing leaders in green roof technology and has been involved in some of the largest installations on the continent. We offer products used for drainage, root reinforcement, and pre-vegetated mat applications in multilayer green roof configurations. Visit our website: www.colbond-usa.com to see the products we offer for this unique and fast growing application.



2007 Silver Level Sponsor

Enkadrain Flow Chart

Drain Type	Backfill Depth (FT)	Silty Sand K Value .33				Clayey Sand K Value .42				Sandy Clay K Value .56			
		Soil Seepage gal/min/ft	Drain Flow gal/min/ft	Safety Factor	Soil Pressure* psf	Soil Seepage gal/min/ft	Drain Flow gal/min/ft	Safety Factor	Soil Pressure* psf	Soil Seepage gal/min/ft	Drain Flow gal/min/ft	Safety Factor	Soil Pressure* psf
3611R	10 ft	0.15	22.3	148	363	0.015	22.1	1472	462	0.0015	21.7	14466	616
3615R	10 ft.	0.15	21.0	140	363	0.015	21.0	1400	462	0.0015	20.7	13799	616
3811R	10 ft.	0.15	19.3	128	363	0.015	18.4	1228	462	0.0015	18.1	12036	616
9010 BTM	10 ft	0.15	5.5	37	363	0.015	5.5	367	462	0.0015	4.6	3048	616
9120**	10 ft	0.15	17.5	117	363	0.015	17.5	1167	462	0.0015	14.9	9965	616
3611R	15 ft	0.22	21.9	99	545	0.022	21.5	977	693	0.0022	20.9	9499	924
3615R	15 ft.	0.22	20.9	95	545	0.022	20.5	932	693	0.0022	19.9	9044	924
3811R	15 ft	0.22	18.1	82	545	0.022	18.0	819	693	0.0022	17.9	8150	924
9010 BTM	15 ft	0.22	5.1	23	545	0.022	4.0	180	693	0.0022	2.8	1275	924
9120**	15 ft	0.22	16.5	75	545	0.022	13.3	602	693	0.0022	9.2	4189	924
3611R	20 ft	0.29	21.4	74	726	0.029	20.9	721	924	0.0029	20.3	7002	1232
3615R	20 ft	0.29	20.4	70	726	0.029	19.9	686	924	0.0029	19.5	6737	1232
3811R	20 ft.	0.29	18.0	62	726	0.029	17.9	618	924	0.0029	17.6	6084	1232
9010 BTM	20 ft	0.29	3.7	13	726	0.029	2.8	97	924	0.0029	2.0	702	1232
9120**	20 ft	0.29	12.5	43	726	0.029	9.2	318	924	0.0029	6.4	2199	1232
3611R	30 ft	0.44	20.5	47	1089	0.044	20.0	456	1386	0.0044	19.3	4377	1848
3615R	30 ft	0.44	19.6	45	1089	0.044	19.4	442	1386	0.0044	19.1	4342	1848
3811R	30 ft.	0.44	17.8	40	1089	0.044	17.5	397	1386	0.0044	17.0	3856	1848
9120**	30 ft	0.44	7.4	17	1089	0.044	5.3	120	1386	0.0044	3.5	785	1848
3611R	40 ft	0.63	19.9	32	1452	0.063	19.3	306	1848	0.0063	17.6	2795	2464
3615R	40 ft	0.63	19.4	31	1452	0.063	19.1	303	1848	0.0063	19.0	3009	2464
3811R	40 ft.	0.63	17.4	28	1452	0.063	17.0	269	1848	0.0063	15.0	2379	2464
9120**	40 ft	0.63	4.8	8	1452	0.063	3.5	55	1848	0.0063	N.A	N.A	2464

Note: For depths greater than 40 contact your Enkadrain representative. / * Based on a soil density of 110 lb/ft³ / **Special order



An impressive track record...

Enkadrain has been used in many residential applications and in numerous high-profile commercial projects:

- Microsoft Headquarters - Seattle, WA
- Embassy Suites - Charlotte, NC
- Coca-Cola Headquarters - Atlanta, GA
- World Congress Center Plaza - Atlanta, GA

- R.J. Reynolds - Winston-Salem, NC
- AT&T Headquarters - New York, NY
- New Jersey State House - Trenton, NJ
- Hyatt Hotel - Naples, FL
- Universal/MCA Corporate Headquarters - Santa Monica, CA
- Paris Hotel & Casino - Las Vegas, NV
- Henderson City Hall - Henderson, NV
- Millennium Park - Chicago, IL
- Union Square - San Francisco, CA

Colbond Inc.

Colbond is a leading producer of high-quality synthetic nonwovens for flooring, automotive, and construction applications, and three-dimensional polymeric mats and composites for civil engineering, building, and industrial applications.

WARRANTY

Colbond Inc. (Colbond) and MFM Building Products Corp. (MFM) warrant that Enkadrain SubSeal Waterproofing System products, when installed in accordance with each product's published installation instructions, are free from manufacture defects for 20 years. This warranty is transferable by the owner of the building structure at the time of initial installation of the Enkadrain SubSeal Waterproofing System products.

Under this warranty Colbond or MFM shall ONLY be liable, at its option, to return the purchase price or replace the Enkadrain SubSeal Waterproofing System product. IN NO EVENT SHALL COLBOND OR MFM BE LIABLE FOR CONSEQUENTIAL DAMAGES OR DAMAGES OF ANY KIND EXCEEDING THE SALE PRICE OF THE ENKADRAIN SubSeal WATERPROOFING SYSTEM PRODUCT FOUND TO HAVE BEEN DEFECTIVE. COLBOND OR MFM MAKES NO WARRANTIES, EXPRESSED OR IMPLIED BY OPERATION OF LAW OR OTHERWISE INCLUDING BUT NOT LIMITED TO WARRANTIES OF MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE OF END USE.

Enkadrain SubSeal Waterproofing System products include, Enkadrain 3611R, Enkadrain 3615R, Enkadrain 3811R, SubSeal-40, SubSeal-60, Enkadri & Drain BTM, and Enkadri Pour & Proof.

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