ROCK BOX

Gabion constructions

TR Engineering

ROCK BOX is a high-strength steel mesh volumetric construction that can be shaped to perfectly fit any riverbed and road retaining wall construction or landslide prevention sites with erosion processes ongoing.

ROCK BOX has been constantly improved and enhanced with the advancement of technology. With its flexibility, high water permeability, and the ease of assembly and installation, it is considered a far better solution than other constructions, especially in areas with high natural hazard risk. Gabions are widely used in civil engineering.

Our ROCKBOX constrcutions outperform general gabions in strength by using 8mm wire net and 16mm steel bar framing, still keeping it a very flexible and multi-purpose solution

Construction Examples / Structual Functions

Soil-retaining Works

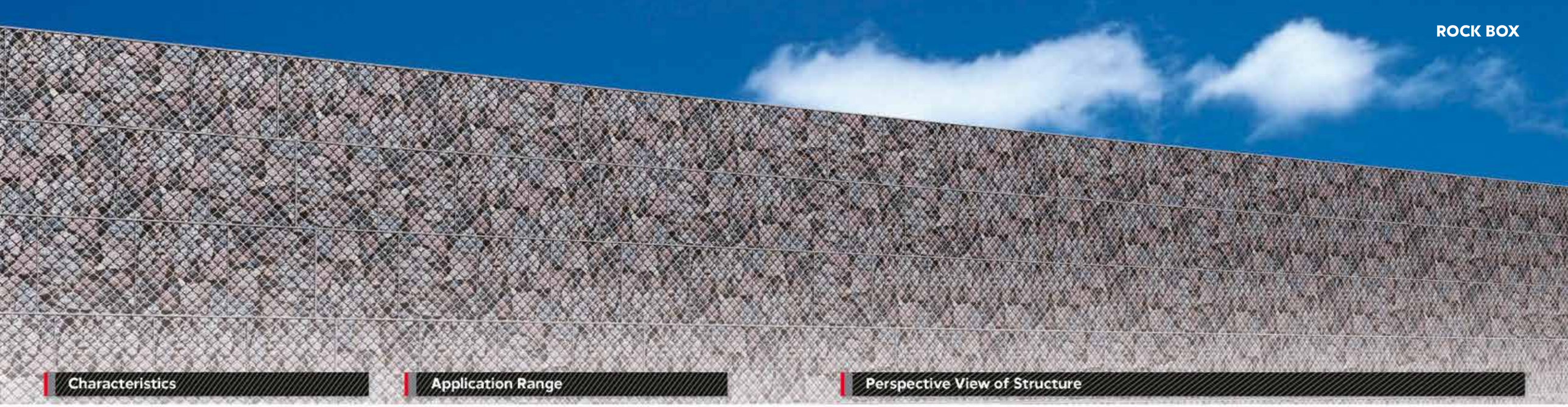
Erosion Control Construction

Stream Construction

Mountainside soil-retaining construction / Retaining wall

Revetment Construction

Harbor Embarkment Mat Construction



Characteristics

It adjusts flexibly to the shifting underlying ground – therefore excellent effect on weak/soft ground.

It drains water between packed stones – therefore effective for stabilizing slopes with frequent water penetration.

All parts are galvanized – therefore excellent anticorrosive weatherproof.

Each parts are lightweight – therefore carrying and assembling is easy.

The panels are assembled with metal fittings – therefore no need for curing maintenance and saves manpower and able power-saving construction.

Application Range

When quick completion is required.

When construction is in the rainy season.

When the use of large machinery is difficult.

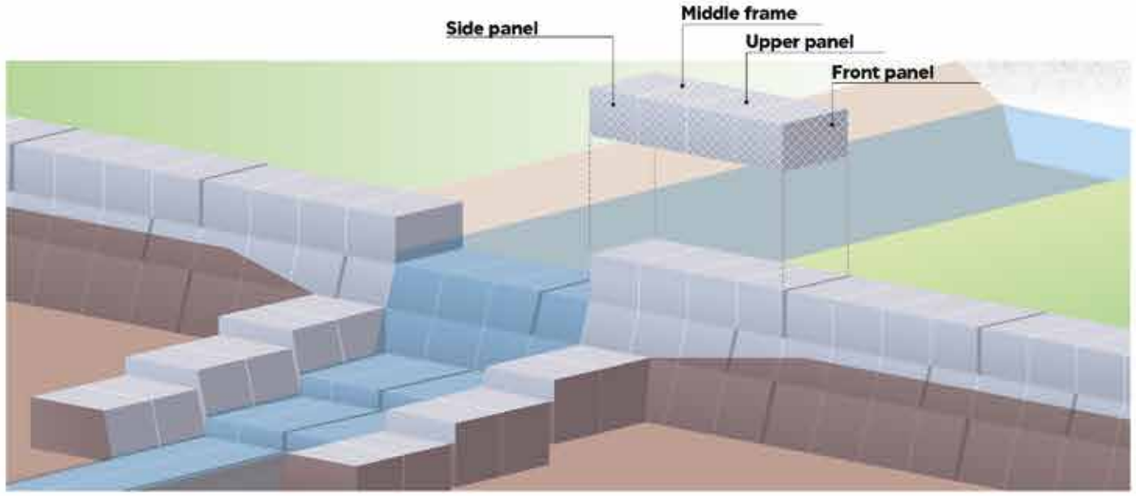
When dewatering is difficult.

When the use of attracted material (sand, cement) is impossible.

In earthquake-prone areas.

In mudflow rivers.

Perspective View of Structure

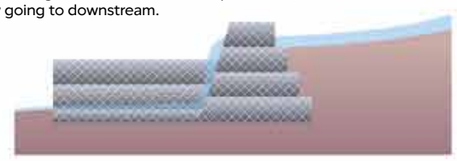


Use

Erosion Control Construction

Relieves the slope of stream bed and makes it stable, and prevents vertical/horizontal corrosion.

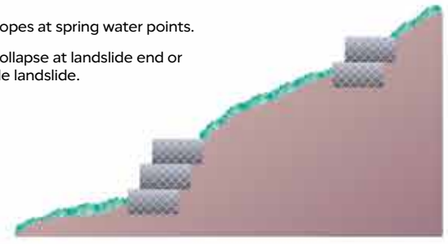
Prevents ruining of riverbed/riverbank by mudflow, and deter the mudflow going to downstream.



Mountainside Earth Retaining Construction

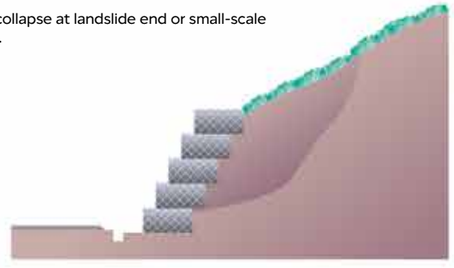
Protect slopes at spring water points.

Prevent collapse at landslide end or small-scale landslide.



Landslide Prevention Construction

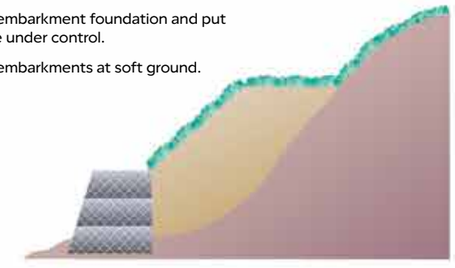
Prevent collapse at landslide end or small-scale landslide.

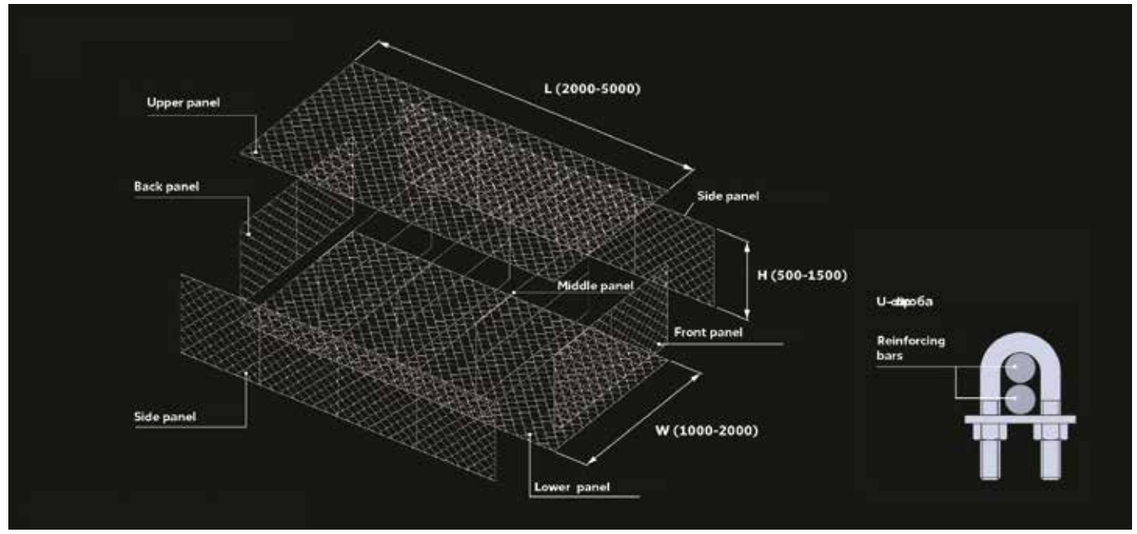


Retaining Wall Construction

Protect embarkment foundation and put landslide under control.

Protect embarkments at soft ground.





Specification

Material	Steel Used	Surface treatment
Chain-link fencing 100x100 MM 130x130 MM 150x150 MM	Galvanizing steel wire ø4-8 MM	Zinc coating (Z) Zinc-aluminum coating (90% Zn / 10% Al) (Z, Al) Zinc-polymer coating (ZP)
Core coating	Steel bar	Zinc coating: Zinc + paint coating
U-clips	Tensile strength: 450-490 H/mm2	Zinc coating:
U-twin clips	Tensile strength: 450-490 H/mm2	Zinc + paint coating

Standard Specification

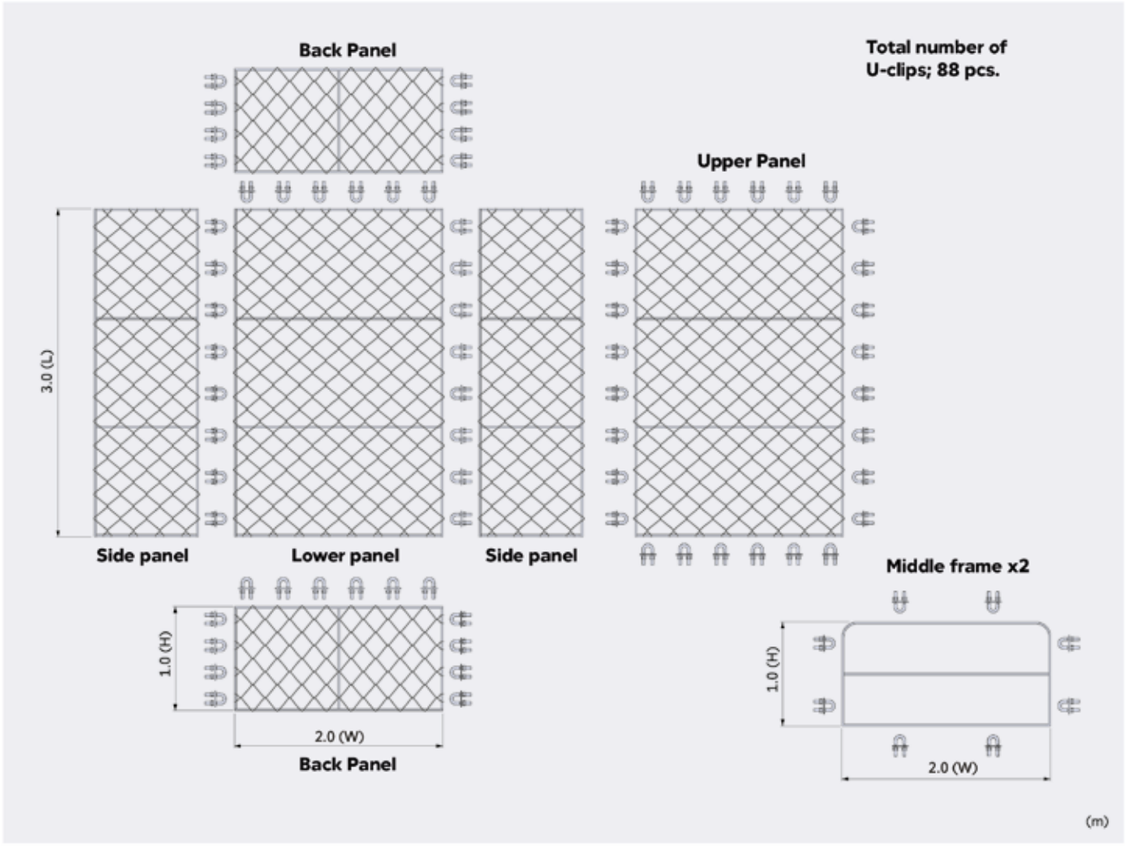
Gabion Rock box construction 0.5 height, 1.5 width, 2.0 length of 130 mm mesh size of wire rope 8 mm diameter with zinc-aluminum coated with rod frame 16 mm diameter:

RockBox 0.5x1.5x2.0-130-8(ZAl)

Approximate weight of the collected RockBox in kilograms

Frame, mm	Wire diameter, mm	Mesh, mm	Height (H), m 2.0	Width (W), 1.0 m				Width (W), 1.5 m				Width (W), 2.0 m			
				Length(L), m											
				2,0	3,0	4,0	5,0	2,0	3,0	4,0	5,0	2,0	3,0	4,0	5,0
8	4	100x100	0,5	54	71	88	104	69	89	109	129	84	107	131	154
			0,75	62	81	101	121	77	100	123	145	93	119	145	172
			1,0	68	89	111	132	84	108	133	157	100	128	156	184
			1,5	80	105	132	158	98	127	155	184	116	148	181	213
		130x130	0,5	52	67	82	96	67	84	102	119	80	100	120	141
			0,75	58	75	94	112	73	93	113	133	87	110	133	156
			1,0	64	82	102	121	79	101	122	143	94	118	142	167
			1,5	74	96	121	144	91	116	141	167	107	135	163	192
12	6	100x100	0,5	83	115	148	180	103	143	183	222	123	170	218	265
			0,75	96	134	175	214	119	164	209	254	141	194	247	300
			1,0	109	150	195	238	132	181	230	279	156	213	270	326
			1,5	134	184	239	291	161	219	277	335	188	254	321	387
		130x130	0,5	74	102	131	159	91	125	160	194	108	148	189	230
			0,75	85	118	155	190	104	143	183	222	122	168	214	260
			1,0	96	132	172	209	115	158	200	243	135	184	233	282
			1,5	117	161	209	255	139	190	240	291	162	219	276	334
		150x150	0,5	69	96	123	150	85	117	149	182	100	138	176	214
			0,75	80	111	146	178	97	134	171	207	114	157	199	242
			1,0	90	123	161	196	108	147	187	226	125	171	216	262
			1,5	109	150	196	238	130	176	223	270	150	203	256	309
16	8	100x100	0,5	137	192	247	302	172	240	308	376	207	288	370	451
			0,75	160	224	295	361	199	276	354	431	237	329	420	511
			1,0	182	252	329	402	223	307	391	475	263	361	459	557
			1,5	225	311	405	494	272	372	472	572	319	433	548	662
		130x130	0,5	125	175	225	275	156	217	279	340	187	260	332	405
			0,75	146	204	268	328	180	249	319	389	213	295	377	459
			1,0	165	228	298	364	200	276	351	427	236	324	412	499
			1,5	203	280	366	446	244	334	423	513	285	387	490	593
		150x150	0,5	110	153	196	240	135	188	240	293	161	222	284	346
			0,75	127	177	234	287	155	215	275	335	183	252	322	392
			1,0	143	197	259	316	172	236	301	365	201	275	350	424
			1,5	175	240	316	385	208	284	361	437	241	328	415	502

Metal fittings(U-clip) installation points / Component material panels development:



RockBox main dimensions and number of U-clips used

H, m	W,m	L,m	Volume, m³	Qty. U-clips, pcs.	H, m	W,m	L,m	Volume, m³	Qty. U-clips, pcs.	H, m	W,m	L,m	Volume, m³	Qty. U-clips, pcs.
0,5	1,0	2,0	1,0	54	0,5	1,5	2,0	1,5	58	0,5	2,0	2,0	2,0	62
		3,0	1,5	68			3,0	2,25	72			3,0	3,0	76
		4,0	2,0	82			4,0	3,0	86			4,0	4,0	90
		5,0	2,5	96			5,0	3,75	100			5,0	5,0	104
0,75		2,0	1,5	60	0,75		2,0	2,25	64	0,75		2,0	3,0	68
		3,0	2,25	76			3,0	3,375	80			3,0	4,5	84
		4,0	3,0	92			4,0	4,5	96			4,0	6,0	100
		5,0	3,75	108			5,0	5,625	112			5,0	7,5	116
1,0		2,0	2,0	64	1,0		2,0	3,0	68	1,0		2,0	4,0	72
		3,0	3,0	80			3,0	4,5	84			3,0	6,0	88
		4,0	4,0	96			4,0	6,0	100			4,0	8,0	104
		5,0	5,0	112			5,0	7,5	116			5,0	10,0	120
1,5		2,0	3,0	70	1,5		2,0	4,5	74	1,5		2,0	6,0	78
		3,0	4,5	88			3,0	6,75	92			3,0	9,0	96
		4,0	6,0	106			4,0	9,0	110			4,0	12,0	114
		5,0	7,5	124			5,0	11,25	128			5,0	15,0	132

TR Engineering

**Россия, 198515, Санкт-Петербург, пос. Стрельна,
ул. Связи, д. 34, лит. А.**

Тел.: +7(812) **331-53-36**
Факс: +7(812) **493-38-55**

tre.spb.ru
info@tre.spb.ru