

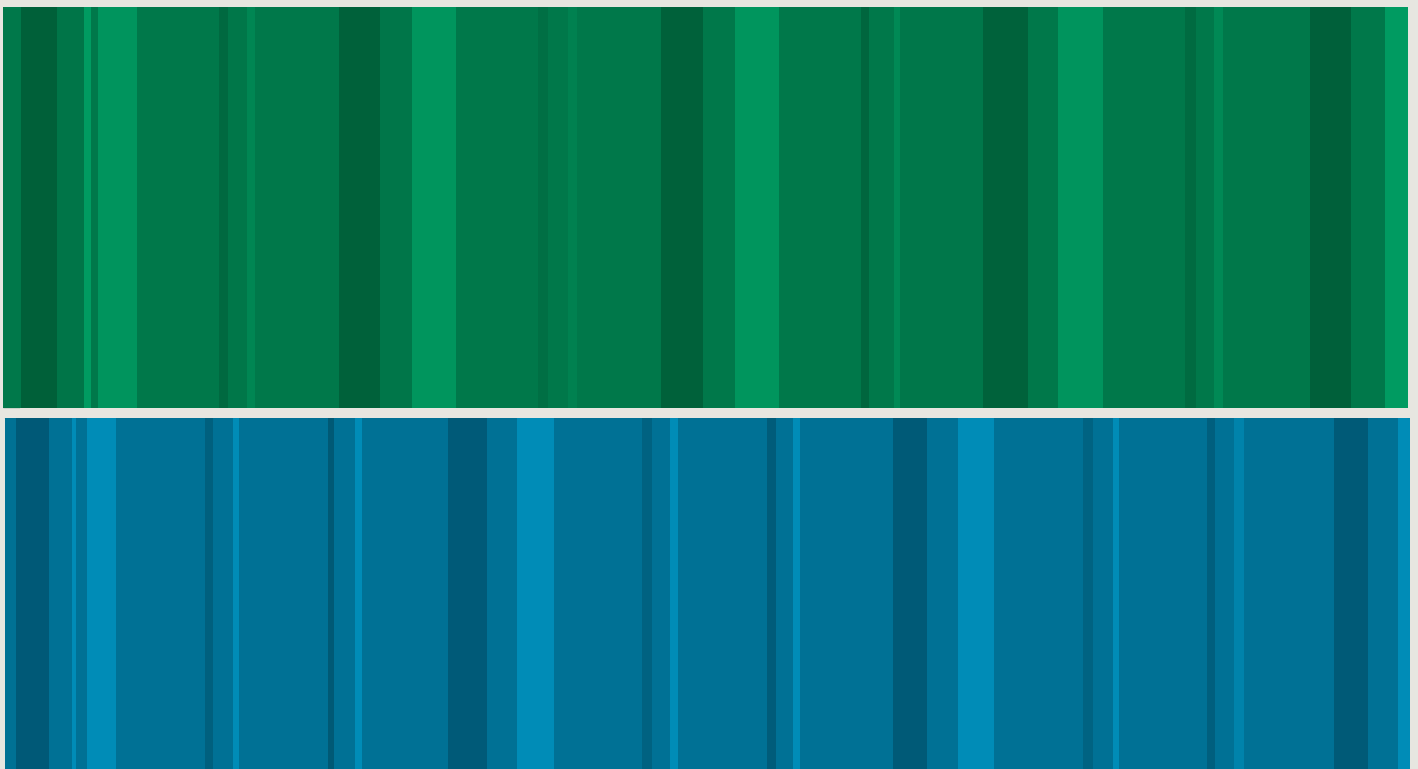


Narayan Iron Works



KOLORMETAL®

Roofs That Look Good, Last Long



PRE-PAINTED GALVANIZED TRAPEZOIDAL PROFILE SHEETS



Narayan Iron Works

A Legacy of Trust

KOLORMETAL® is a brand of National Steel -- the steel manufacturer par excellence. National Steel does not only has a landmark position in the Indian steel processing industry, but also enjoys credibility in the markets the world over. With consistent quality, commitment to customers and reliability in delivery, National Steel has carved a reputation for itself. National Steel manufactures a wide range of products including Cold Rolled Steel, Galvanized Plain and Corrugated Steel, and Pre Painted Steel. National Steel has wide market reach in India as well as South East Asia, the Middle East, the Far East, Europe and the Americas.



KOLORMETAL



KOLORMETAL® extends the virtues of pre-painted steel to produce durable roofing and cladding solutions that are esthetic, efficient and economical. **KOLORMETAL®** offers two roofing profiles rolled from high quality galvanized color coated steel.

Superior Process

Our integrated processing plant is capable of producing cold rolled steel to exacting standards. We have the advantage of very precise gauge control of the substrate owing to our most modern CR mills. We coat the CR coils with uniform thickness of zinc in our two continuous galvanizing lines. The galvanized coils are tension levelled and skin passed for superior organic coat adhesion.

For superior pre-paint properties we employ the world best two coat -- two bake technology. The finished steel coil is treated with chemicals in preparation for the color coating. Primer is applied on both the surfaces of the metal and is baked at optimum temperatures. The metal then receives the final color coat on both the surfaces. The color coat is again baked in Catenary ovens. The finished pre-painted coil is then roll formed to produce mechanically sound and structurally superior profiles for roofing and cladding.

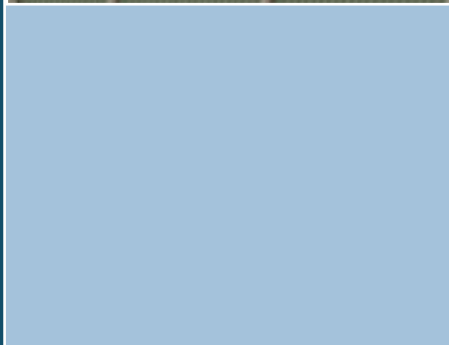
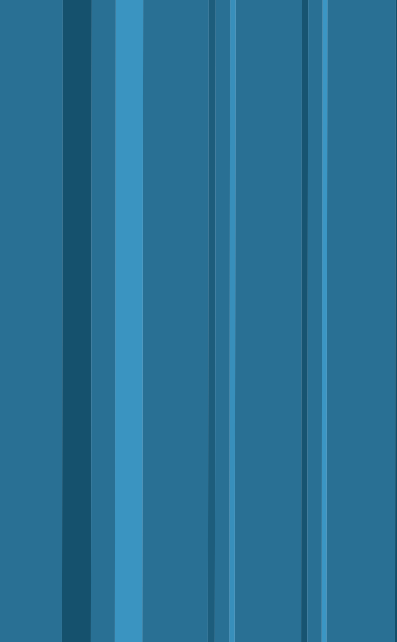
Superior Performance

KOLORMETAL® profiles are made of quality metal substrates with high performing pre-treatment, primer and topcoat all brought together in a carefully controlled manufacturing process that delivers best quality and performance.

Every **KOLORMETAL®** profile is tested and optimized for error free performance year after year. Usually, these profiles do not need a revisit for decades. Superior color adhesion and precise zinc coating ensure better corrosion resistance and cut-edge protection. Use of high performance paints like High Durable Polyester (HDP) and Poly Vinylidene Floride (PVDF) means the sheets retain their color and gloss over a long period of time.

Precise Engineering

KOLORMETAL® profiles are carefully designed to



withstand the elements of nature and to last long in the face of adverse environments. The troughs are designed for quick drainage of water even at low slope angles. The unique accent of the crest ensure that there is little water overrun on the fasteners, resulting in better rain protection. The profile sides overlap perfectly, sheet after sheet, eliminating the chances of water seepage from the joints. The profiles are available in long lengths optimized to withstand air pressures at the same time reducing the overall number of joints required to complete the roofing. Overall it is superior engineering that gives superior performance at reduced investments for many number of years.

Better Corrosion Resistance

A uniform zinc coat on quality substrate is further coated with primers and organic color coats. The coats are baked in high performance Catenary ovens. This process provides better barrier and sacrificial coatings that resist corrosion even in highly saline environments.

Better UV Resistance

Most coatings fail when exposed to sunlight over prolonged period. The UV rays in the sunlight penetrate deep into the paint destroying the

underlying molecular structure, which results in loss of gloss, fading, chalking, brittleness and loss of coating adhesion.

Through continuous research with our paint manufacturing partners, we have been able to resist the effects of UV rays on our profiles significantly. Better coating and enhanced technologies result in **KOLORMETAL®** profiles retaining gloss, color and adhesion integrity for many years.

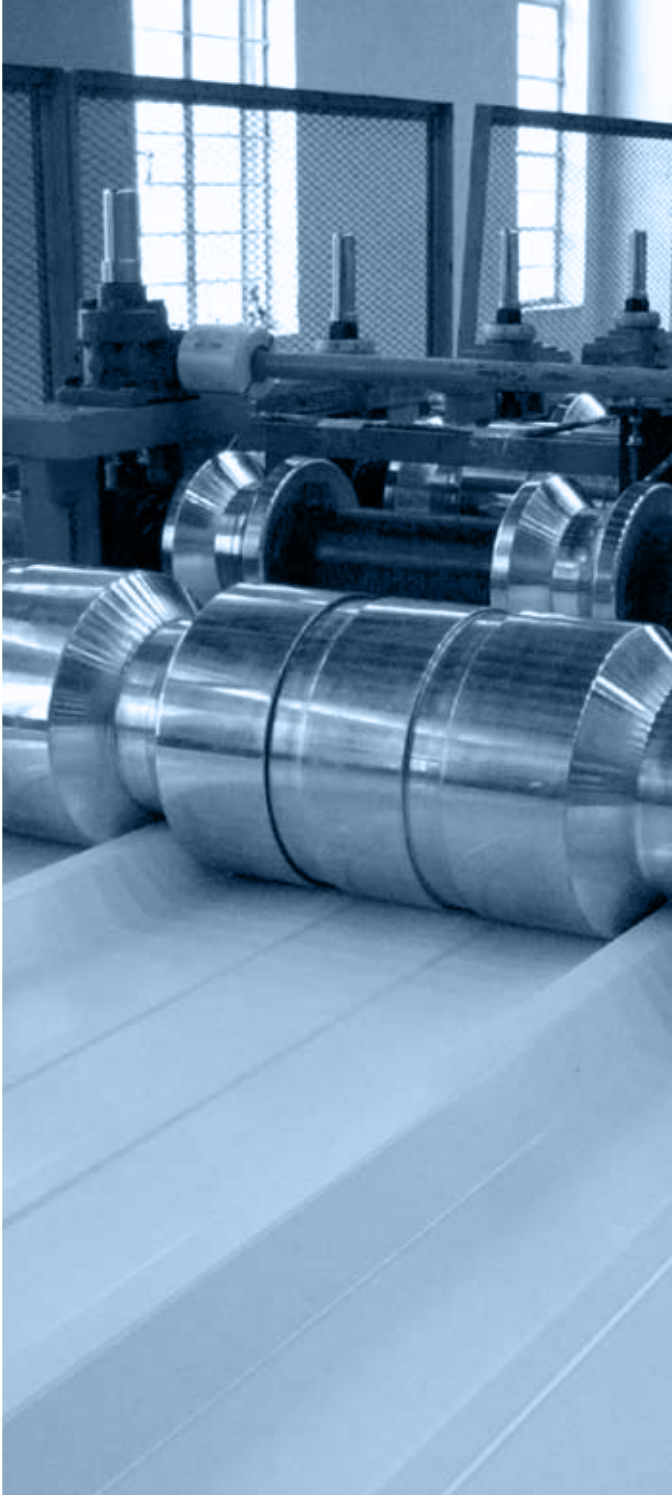
KOLORMETAL® Trapezoidal Profiles

We roll-form profiles in two cover widths; 1000 mm & 1060 mm. Both the sizes come in a variety of standard RAL shades and may even be color coated as per specific customer requirements. We can color coat and roll form Galvanized Steel, Galvanized Aluminium, Stainless Steel and Aluminium. These are ideally suited for industrial construction, housing and utility sheds. These profiles are roll formed from a base coil width of 1220 mm. Our products adhere to Indian and international standards IS 14246-1995 , JIS G 3312, ASTM A 755, EN 10169-1.



Narayan Iron Works





With consistent quality, commitment to customers and wide reach, National Steel holds a landmark position in the Steel Industry

World Class Profiling

KOLORMETAL® is equipped with one of the best profiling lines. This single roll forming line produces both the profiles with quick change in tooling. This enables us to achieve a measure of efficiency in producing the two profiles.

The line is fed by a precision uncoiler that ensures continuous profiling with minimum change over time. Digitally controlled shear blades at the end of the line maintain the length of the resulting profiles within a millimeter of tolerance.

The line processes a variety of materials including Pre-Painted Steel, Stainless Steel, Galvanized Aluminium, Galvanized Steel and Aluminium. It is complemented with accessory production machines including the Hydrofold, Hydraulic Crimping machine, Cut To Length machines, Slitting Lines etc.

National Steel stresses the importance of quality checks of their profiles. Each batch has to withstand random sample checks for a number of parameters including dimensional accuracy, salt spray test, adhesion and impact characteristics.

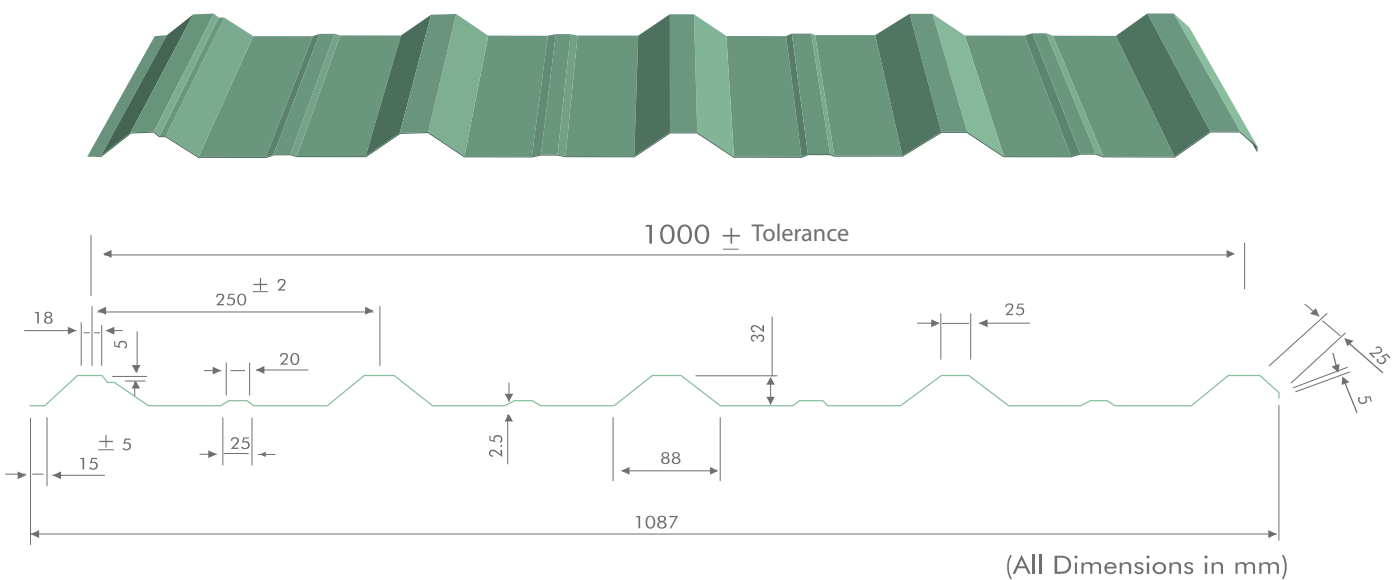
The line also includes an inline stacker that ensures proper stacking and packing of profiles as per industry standards.



Narayan Iron Works

KOLORMETAL® 1000

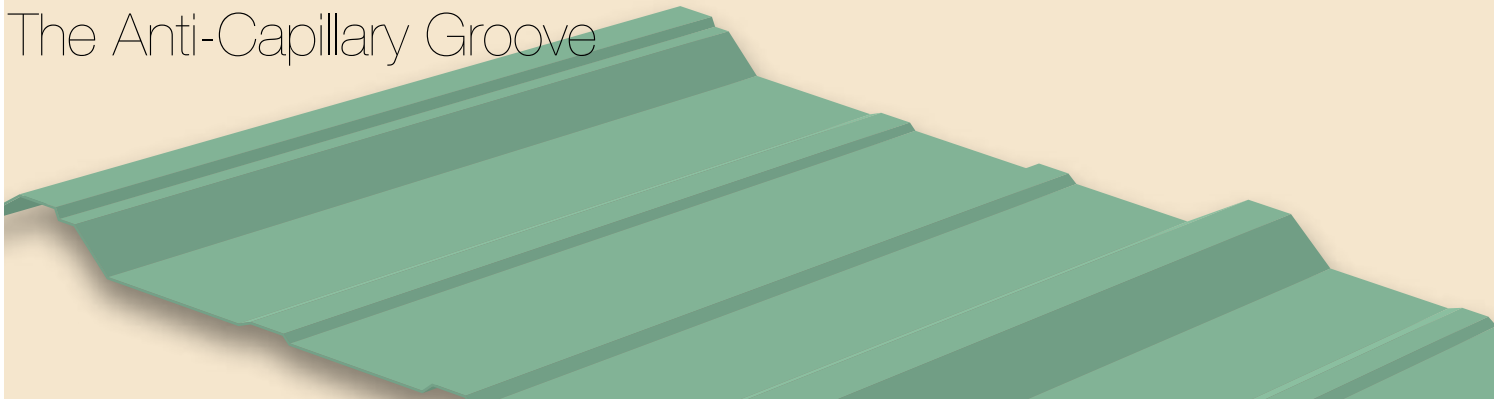
KOLORMETAL® 1000 is a special design profile for stronger roofing applications. Its optimum pitch and depth ratio lends superior weight bearing capacity, making KOLORMETAL® 1000 the profile of choice. Its unique design makes for a watertight roofing solution with the added advantage of an anti-capillary groove, which ensures a leak proof installation for years to come. The design also prevents moisture built up on fasteners preventing premature corrosion.



Sectional Properties

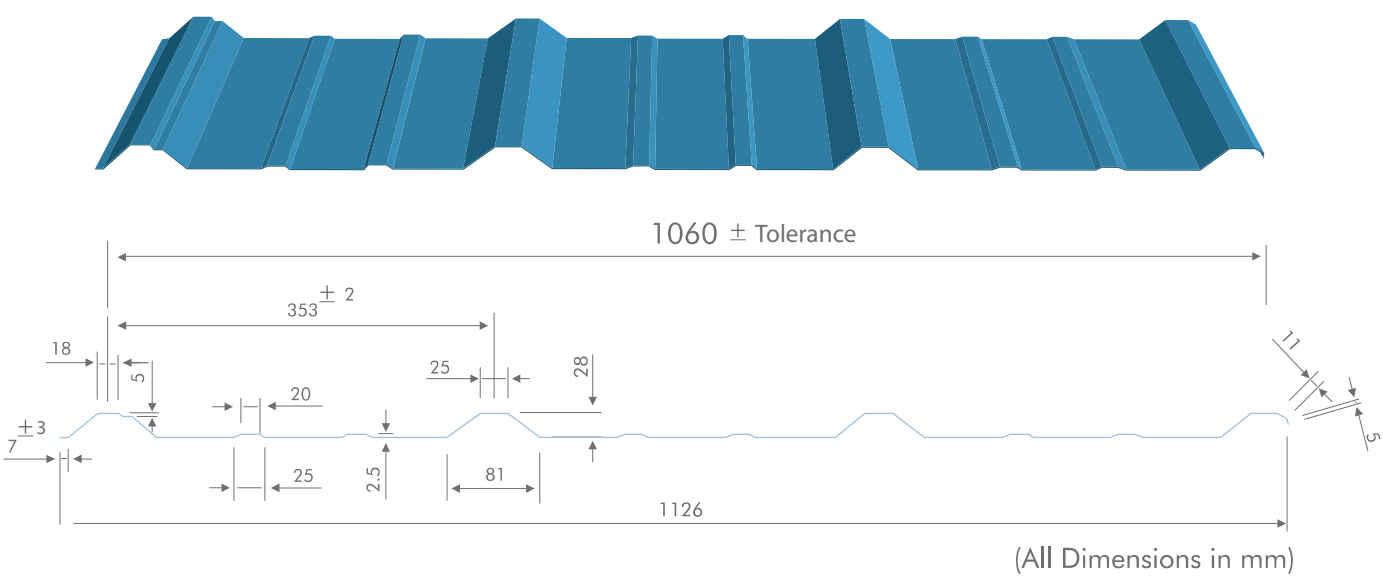
Thick-ness	Ixx	Zxx		Span for Deflec-tion		U.D.L. Kg/m² for span														
		Top	Bot-tom			1 meter			1.4 meter			1.6 meter			1.8 meter			2.0 meter		
mm	cm⁴	cm³	cm³	L/100	L/200	Single Span	Dou-ble Span	Multi Span	Single Span	Dou-ble Span	Multi Span	Single Span	Dou-ble Span	Multi Span	Single Span	Dou-ble Span	Multi Span	Single Span	Dou-ble Span	Multi Span
0.40	4.80	2.02	6.00	2.19m	1.74m	368	372	376	134	138	146	100	110	130	64	84	120	46	56	80
0.45	5.40	2.26	6.70	2.28m	1.81m	414	420	427	151	156	166	112	122	142	84	92	135	52	63	90
0.47	5.70	2.40	7.10	2.32m	1.84m	437	443	449	159	165	178	118	127	145	86	103	142	54	66	95
0.50	6.00	2.53	7.50	2.36m	1.87m	461	467	472	168	175	190	125	133	149	88	115	150	57	70	100
0.55	6.60	2.79	8.30	2.43m	1.95m	507	512	516	184	189	200	138	150	170	96	127	165	63	77	110
0.60	7.20	3.03	9.00	2.51m	2.00m	553	556	559	201	207	219	150	160	180	105	138	180	69	84	120
0.63	7.50	3.16	9.38	2.54m	2.02m	575	579	581	209	217	233	157	167	182	110	144	188	72	87	125
0.65	7.80	3.28	9.76	2.58m	2.04m	598	602	604	218	228	248	165	175	185	116	150	196	75	90	130
0.70	8.40	3.54	10.50	2.64m	2.09m	645	648	655	235	243	260	180	190	200	127	161	210	80	98	140
0.80	9.60	4.04	12.00	2.76m	2.19m	737	741	744	268	276	292	200	205	235	139	184	240	92	112	160
0.90	10.80	4.55	13.50	2.87m	2.28m	830	832	835	302	310	336	225	240	270	152	207	270	103	126	180
1.00	12.00	5.05	15.00	2.97m	2.36m	922	935	944	336	346	366	250	275	305	167	230	300	115	140	200

The Anti-Capillary Groove



KOLORMETAL® 1060

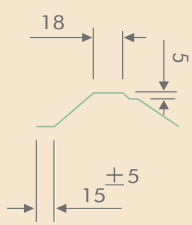
KOLORMETAL® 1060 is a cladding profile that is designed to fit most applications. The profile offers wider coverage with optimum strength. The unique center-ribs lend better wind load carrying capacity. The unique anti-capillary groove prevents water seepage through the overlaps, ensuring watertight claddings that remain leak-proof for years. The design also prevents moisture built up on fasteners, preventing premature corrosion.



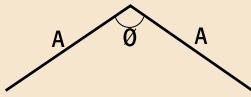
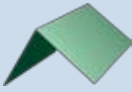
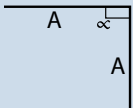
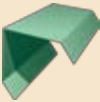
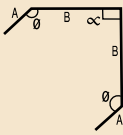
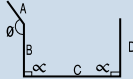
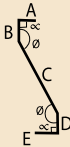
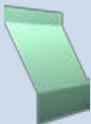
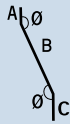
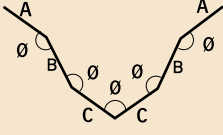
Sectional Properties

Thick-ness	Ixx	Zxx		Span for Deflec-tion		U.D.L. Kg/m² for span														
		Top	Bot-tom			1 meter			1.4 meter			1.6 meter			1.8 meter			2.0 meter		
		mm	cm⁴	cm³	cm³	L/100	L/200	W/m²=70 Kg	Single Span	Dou-ble Span	Multi Span	Single Span	Dou-ble Span	Multi Span	Single Span	Dou-ble Span	Multi Span	Single Span	Dou-ble Span	Multi Span
0.40	3.16	1.40	5.70	1.90m	1.51m	242	272	320	88	100	128	48	60	88	40	56	80	30	36	60
0.45	3.50	1.58	6.41	1.98m	1.57m	272	306	360	99	112	144	56	67	99	45	62	90	34	40	68
0.47	3.72	1.67	6.77	2.01m	1.60m	287	323	380	104	118	152	58	71	104	47	66	95	36	42	71
0.50	3.95	1.76	7.13	2.05m	1.63m	302	340	400	110	125	160	60	75	110	50	70	100	38	45	75
0.55	4.34	1.93	7.85	2.09m	1.68m	332	374	440	121	137	176	66	83	121	55	77	110	42	50	82
0.60	4.73	2.11	8.57	2.18m	1.73m	363	408	480	132	150	192	72	90	132	60	84	120	45	54	90
0.63	4.92	2.20	9.11	2.22m	1.75m	378	425	500	137	156	200	75	93	137	62	87	125	46	56	94
0.65	5.12	2.29	9.65	2.27m	1.78m	394	442	520	143	163	208	78	97	143	65	91	130	48	58	98
0.70	5.52	2.46	9.98	2.29m	1.82m	423	476	560	154	175	224	84	105	154	70	98	140	53	63	105
0.80	6.31	2.81	11.41	2.40m	1.90m	484	544	640	176	200	256	96	120	176	80	112	160	60	72	120
0.90	7.10	3.16	12.83	2.49m	1.98m	544	612	720	198	225	288	108	135	198	90	126	180	68	81	135
1.00	7.89	3.51	14.26	2.58m	2.05m	605	680	800	220	250	320	120	150	220	100	140	200	75	90	150

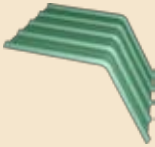
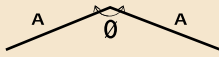
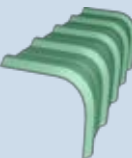
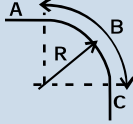
The performance and longevity of any roofing installation is greatly affected by rainwater, snow and condensation. KOLORMETAL® profiles incorporate unique anti-capillary groove to stop moisture run-ins. The Anti-Capillary Groove ensures that water draining through valleys does not creep into the overlap, effectively preventing water dripping through the roof. The system increases the life of roofs and claddings many folds.



KOLORMETAL® Plain Accessories

Plain Ridge			A = 300/400/600 mm Ø = Roof Angle (Min 110°) L = 2440 mm max
Barge Board			A = 200 /300mm ∞ = 90° L = 2440 mm max
Corner Flashing (Wall To Wall)			A =30 mm B =120mm Ø = 120° ∞ = 90° L = 2440 mm max
End Eave Gutter			A =100 mm B =175 mm C = 325 mm D=200 mm L = 2440 mm max. ∞ & Ø = As Per Requirement
Louver (A)			A =30 mm ∞ = 90° B =30 mm C=180 mm D = 30 mm E=30 mm L = 2440 mm max. Ø = As Per Requirement
Louver (B)			A =50 mm B =250 mm C=100 mm Ø = As Per Requirement L = 2440 mm max.
Valley Gutter			A =150 mm B =250 mm C= 200 mm Ø = As Per Requirement L = 2440 mm max

KOLORMETAL® Trapezoidal Accessories

Profile Ridge			A = 300/400/600 mm Ø = 140° min. Upto 0.50 mm Thk Ø = 150° min. Upto 0.60 mm Thk Length = 1087/1126 mm (Effective Length=1000/1060mm)
Profile Northlight Curvature			A = 150/200 mm B = 300 mm C = 150/200 mm R = min 500 mm W = 1087 mm/1126 mm (Effective Width = 1000/1060mm)
Profile Curvature			R = min 1000 mm Sheet Length=4500 mm max W = 1087 mm/1126 mm (Effective Width = 1000/1060mm)

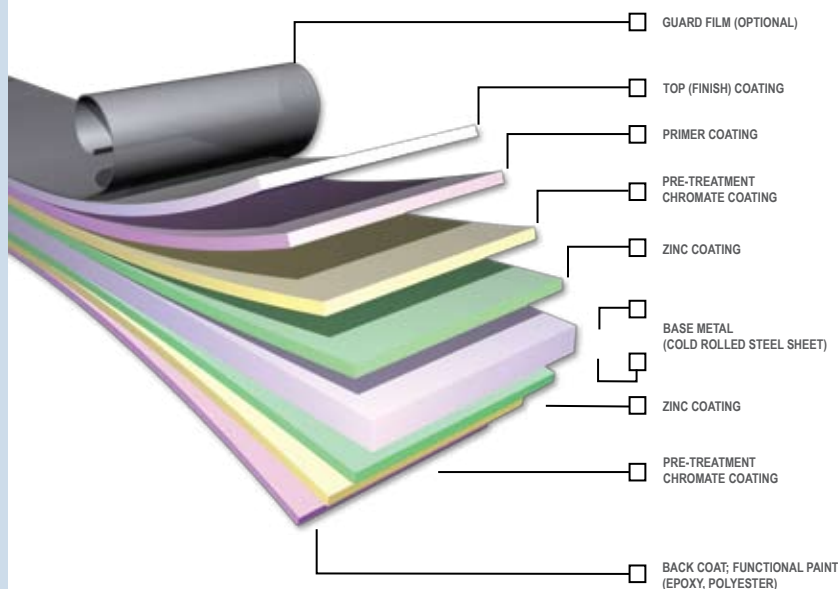


Narayan Iron Works

102, steel chambers, 17 south hathiapala road, indore
0731-3057879 9826098307 8889788080

Sandwiched Strength

Cross-section of **KOLORMETAL®** steel (PPGI)

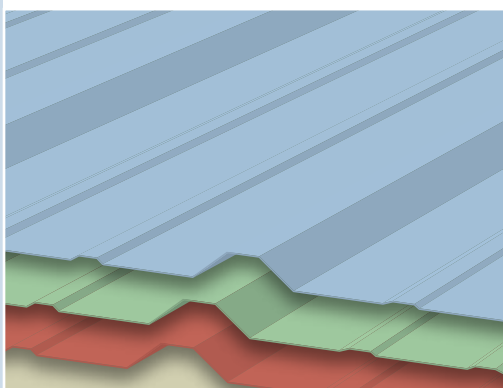
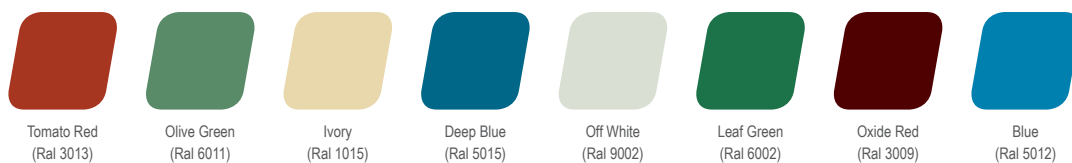


KOLORMETAL® offers its users a unique blend of advantages-

- The strength of steel.
- The corrosion resistance of metallic coating.
- The beauty and additional corrosion protection of paint.

Produced on sophisticated coil coating line under rigid quality controls, this product can be readily roll formed, bent, pressed, cut, drilled, lock-seamed and stamped without degradation in the quality of the paint.

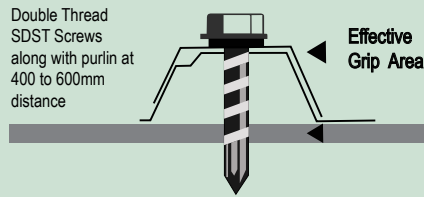
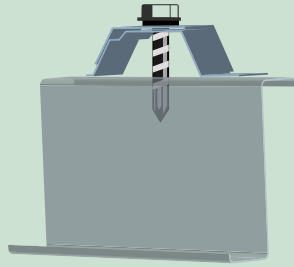
Shades Of **KOLORMETAL®**



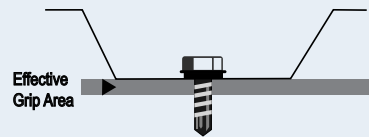
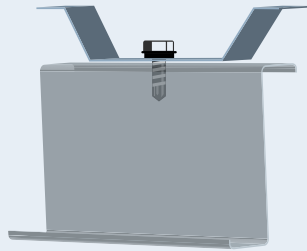
Fixing Details

KOLORMETAL® profiles should be fixed using self drilling and tapping screws as per AS 3566 or equivalent. The screws should be fixed in between purlin runners at approx. 400 to 600 mm distance.

Crest Fixing Details



Valley Fixing Details



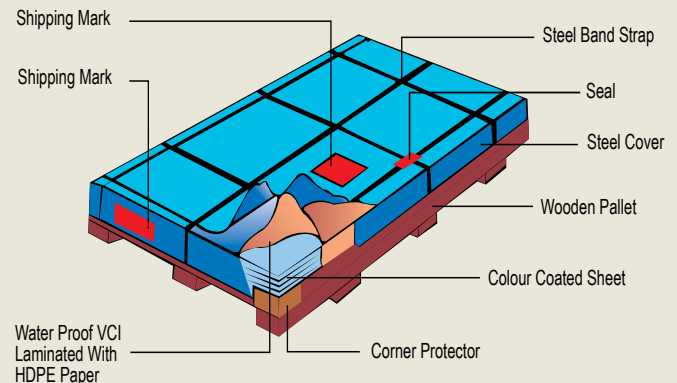
Some Of Our Prestigious Installations

1	Agarwal Polyfil	Bhilad	27	LG Electronics Pvt Ltd	Ranjangaon -Pune
2	ALPS Industries	Haridwar	28	MID India Engineering Ltd	Gandhidham
3	Baniyan & Berry	Anjar	29	Military Engineering Services	Leh
4	Bevcon Wavors	Hyderabad	30	N.T.P.C , Ltd	Tanda
5	Bharat Foods	Kutch	31	Nai Duniya	Gwalior
6	Bharat Susamachar	Dehradun	32	Neel Metal	Haridwar
7	Britania Industries Ltd	Rudrapur	33	Pasco Motors	Chandigarh
8	Cadbury India Ltd	Baddi	34	Pasram Industries Ltd	Kutch
9	Cello Industries	Haridwar	35	Patel Woods Products Pvt. Ltd	Gandhidham
10	Clean Foods Limited	Bangalore	36	Pepsico India Holding Corporation	Sangrur
11	Cummins India Ltd	Pune	37	Piaggio Vehicles Pvt ltd	Thane
12	Doon School	Dehradun	38	Porwal Auto Components Ltd	Indore
13	Eagal Line Fixing	Noida	39	Rana Sponge Ltd	Dhenkenal
14	Electrotherm India Ltd	Kutch	40	Roofing India Systems	Bangalore
15	Essar Steel Ltd	Hazira , Surat	41	Ruchi Credit Corporation Pvt. Ltd	Kota
16	Excellent Tools	Noida	42	Somani Tiles Pvt. Ltd.	Himachal Pradesh
17	Gujrat Ambuja	Vasai , Mumbai	43	Srikanya Corporation	Hyderabad
18	Gujrat NRE Coke Ltd	Kutchh	44	Subros Limited	Pune
19	Hydrabad Chemical Supplies	Jammu	45	Sunshine Oleochem	Gandhidham
20	Ind- Swift Laboratories	Jammu	46	Suprajit Engineering Ltd.	Bangalore
21	Indian Steel Corporation Ltd	Gandhidham	47	Tata Motors	Pune
22	Intergra Overseas	Gurgaon	48	T.D. Power Systems Pvt. Ltd.	Bangalore
23	Jennex Granites	Hosur	49	Thysumeet Neel Auto	Pune
24	Kem Rock Industries & Export Ltd .	Baroda	50	Transpek Silox Industries Ltd	Silvasa
25	Koleswar Industries Ltd .	Gandhidham	51	Tyco Adhesives	Baroda
26	Larsen & Toubro Ltd.	Bangalore	52	Welspun India Ltd	Gujrat

KOLORMETAL® profiles are packed meticulously to withstand the stresses during transportation. The packing is rugged, tough and water proof. Profiles are packed in bundles of maximum 5 MT each. The bundles are put on strong wooden pallets that prevent the profiles from buckling and bending. The bundles are then covered with GI sheets and are secured with steel band straps fastened to the wooden pallet. The corners are further reinforced with custom designed corner protectors. For easy identification every packet is marked with unique identification tags.

Guide to Ordering :

While ordering, the following need to be specified to ensure correct and prompt delivery ; thickness (total coated thickness or bare metal thickness), width, length, zinc coating, primer thickness, top & back coat thicknesses, type of paint, RAL shades for top & back coats, Matt/Semi Gloss/Gloss finish, end use, delivery schedule.



GUIDELINES FOR HANDLING, STORING AND MOUNTING OF **KOLORMETAL®** PROFILES.

Guidelines that ensure **KOLORMETAL®** profiles enjoy a long service life and retain their full glorious appearance

A Point To Note

KOLORMETAL® is a premium product and should be used in the way that brings out its qualities and utilities the best. The information given here cannot replace the knowledge of well trained mounting staff, it should only be seen as additional help for responsible and discerning customers.

Handling Of Material

Water proof VCI laminated HDPE paper packing on special wooden pallets are used when supplying profiles. Upon arrival, it is advised that stacks be checked for completeness and for possible damages, and damages, if any, be reported immediately to the company's or supplier's nearest contact point.

In the event of crane-usage, rubber padded slings are advised for profile edge protection. Since both ends of the profile are important for proper mounting, care should be taken to ensure that there is no damage. There is an option (on special request by customers) for factory applied guard film in order to prevent the color coated surface from being damaged during storage, handling and mounting. Immediately after mounting, the guard film should be pulled off as atmospheric influences will transfer the guard film glue to the profile surface, resulting in delamination of guard film and accumulation of dust and dirt on the profile. Longer storage periods should therefore be avoided.

Site Storage

KOLORMETAL® profiles should be stored with a slight inclination in the longitudinal direction to allow drainage of water, if any (since standing water may cause serious damage to the profiles). Stacks should never be piled one upon the other. This will ensure that there are no pressure marks on the profiles. Care should also be taken to make sure that they are not kept in a place where there are chances of people walking over them. Profiles should be stored in such places and in such a way that they are protected from rain, storm or dirt. Textile covers are recommended as they are permeable to air (that is, they 'breathe') and allow humidity to dry



rapidly. Regular inspection of the stored material is recommended to ensure compliance with the above suggestions and recommendations.

Preparation Of Mounting Work

KOLORMETAL® profiles are suitable for being mounted on supporting structure made of steel and concrete. Before starting the mounting work such supporting structure has to be checked for perpendicularity, rectangularity and flatness. For proper mounting, it is necessary that the structure be properly leveled. It is advised that a structural engineer checks the supporting structure for its viability. Care should be taken that **KOLORMETAL®** profiles are never dragged from the stack. Profiles should always be lifted from all four edges and carefully carried to ensure that there is no damage.



Tools And Accessories

To cut profiles at the site it is better to use a compass saw. Only if suitable saw disc and precise guidelines are not available should circular saw be used. There is a chance that the cutting area heats up, which should be avoided since this may cause burning of the zinc layer and the coatings, which leads to a loss of corrosion protection. Make sure that drilling and cutting chips are removed immediately to protect the high quality surface of the **KOLORMETAL®** profiles against corrosion and other damage.

Final Inspection

As a final check, profiles should be inspected for minor mounting damages, left-over tools, screws etc. Any slightest damage should be repaired immediately or in cases where it is necessary, the complete profile should be replaced. If necessary, the surface of the profile should be cleaned and made free from metallic chips and other foreign particles.