By EFTCG

PRE-ENGINEERED BUILDINGS



















VISION

• For NORDIC Steel to be recognized as the bench mark in the steel buildings industry. This will be accomplished through its product **P**erfection, engineering **E**xcellence and the **B**est customer services in the industry.

MISSION

- To bring the NORDIC technology to where it is most needed in the world, and help others "build a better life", through industrialization.
- To (jointly) build high capacity, effi cient & cost effective steel factories for speedy delivery and for benefiting from "economies of large scale".
- To design and fabricate safe and technologically advanced buildings.
- To offer customers versatility in design & fabrication to meet their exact building requirements.
- To offer customer services second to none in the industry.

VALUES

- Be a Leader and not a follower.
- Share Knowledge and Success with others.
- Forge local alliances wherever you go.
- Apply only the Latest design and buildings codes.
- Continually Improve our products.
- Customer service makes all the difference; customers are lifetime partners; always seek a Win Win solution.
- The longest journey begins with the smallest step, so begin with the end in mind, and focus on the long term, not just the short term.

OHSE POLICY

Occupational Health Safety and Environment

- To comply with applicable occupational health and safety laws and regulations and set internal standards and other applicable requirements.
- To apply practices and use technologies that minimize risks to health & safety.
- To make continuous improvement in its activities to prevent personal injury and/or property damage.
- To comply with applicable environmental laws and regulations and other applicable requirements.
- To apply practices and use technologies that minimize pollution.
- To take corrective action whenever past practices have harmed the environment.
- To ensure that prompt action is taken whenever one of its activities endangers the health & safety of its Employees, Customers, the General Public, and the Environment.
- To make continuous improvement in its activities to prevent pollution of air, land & water.



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INTRODUCTION

The NORDIC Group of companies, based in Europe, started its Asia operations in 1994 and was one of the first companies to bring the Pre-Engineered Buildings (NORDIC) technology to the East Asia region.

With over 6,000 buildings already completed in Vietnam, Thailand, Laos, Bangladesh, Qatar, India, Sri Lanka, etc, NORDIC has become a regional leader in the design, fabrication, supply, and construction of Pre-Engineered Steel Buildings.

NORDIC Steel Buildings Co., Ltd boasts an impressive list of satisfied local and international customers that includes, among others, such world class corporations as Obayashi, Taisei, Samsung, Doosan, Posco, Kumagai, Liwayway, Unilever, Reliance Industries and Procter & Gamble.

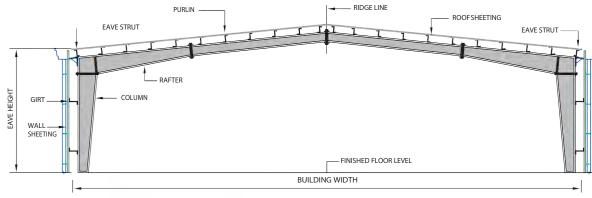
Our offi ces in Vietnam are staffed with over 150 talented and experienced engineers who would be very pleased to offer you completely free consultation, a comprehensive quotation including proposal drawings, in the shortest possible time-frame.



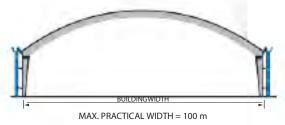
MINDE E

STRUCTURAL STEEL FACTORY **PRE-ENGINEERED BUILDINGS STANDARD** Sky Light (1.5 mm) RV Curved Panel Bird Screen Downspout (0.6 mm) RV Sheeting - Fascia LOK-SEAM® Roof Panel LOK-SEAM® **Eave Gutter WARRANTY Against Water Leak** (0.5 mm)**RV** Frame Sag Arrestor (Galvanized) Cable Bracing (Galvanized) (1.5 mm) Eave Strut (Galvanized) 202 Sag Arrestor Purlin (Galvanized) **Double Sliding Door** Canopy NordicRoof[™] Personnel Door NordicLeed - White Cream Color Roll-Up Door **Gable Trim** SRI : **84** (0.5 mm)Solar Reflectance : **0.69** Thermal Emittance : **0.86** Recycled Content : **27**% Aluminium - $(NordicINSUL^{TM}/NordicFoam^{TM})$ Glass Window **Recycled Content: 39%** Louver (AluNordi Rigid Frame **Recycled Content: 16.69%** Concrete Floor Up to 300 Ton Cra Girt (Galvanized) Post & Beam **Cable Bracing Ridge Ventilator** 48m (Galvanized) 1/ Negative pressure 2/ Practical hot air flow **N**ordicWallTM 3/ No water leak **TOP RUNNING CRANE** Galvanized Purlins (Galvanized) Silver180™ **Flange Brace LEAD - FREE**

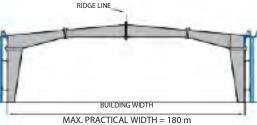
STANDARD FRAMING SYSTEMS



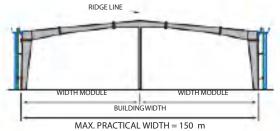
TYPICAL CROSS SECTION



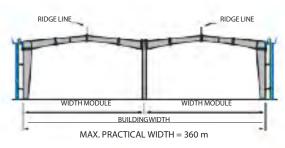
Built-up Curved Rafter (BU)



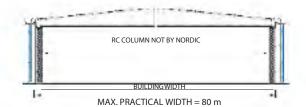
Clear Span (CS)



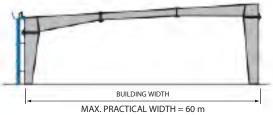
Multi-Span "1" (MS-1)



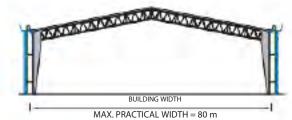
Multi-Gable (MG)



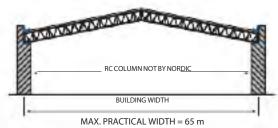
NordicTruss (PT)



Single Slope (SS)

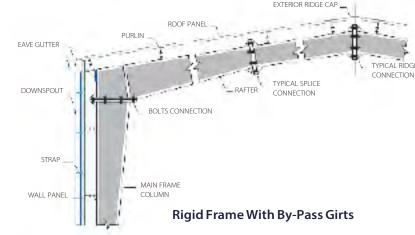


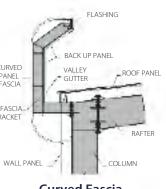
NordicHybrid (PH)



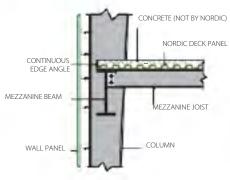
Roof System (RS)

STANDARD STRUCTURAL DETAILS

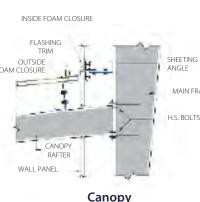




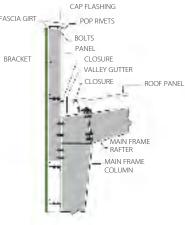
Curved Fascia



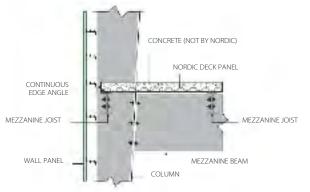
Mezzanine Joist Connection to Mezzanine Beam



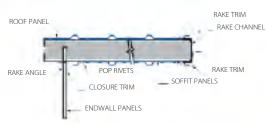
Canopy



Parapet Fascia



Mezzanine Beam Connection to Main Frame Column



Endwall Roof Extension With Soffi t



ROOF PANEL

Sidewall Roof Extension

NORDIC PRODUCTS



Roof Liner



Conveyor



15m Bay Spacing



Up to 300 Ton Crane



Composite Decking



Mezz: Column, Beam, Joist, Deck



Composite Roof with Sub Purlin



Partitions



Wall Liner



Hanging Pipes



Portal Bracing



Tripper Beam



Huge Truss Jack Beam



Reclaimer



NORDIC PRODUCTS



Multi-Level Crane Beam



Conveyor System





NordicDek® with Reinforcement



Grating & Handrails



Staircase



Expanded Metal



Framed Opening







Hangar Door



Composite Beam



Mesh for RV



Cage Ladder



Pipe Rack



NORDIC PRODUCTS



Special Size Door



Personnel Door



Roll Up Door



Chequered Plate

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Sundry Items

Anchor Bolts:

- JIS G3101 SS400 (or equivalent)
 Fu=40.0 kN/cm².
- **Galvanized** anchor bolts.
- 03 nuts for anchor bolts.
- Plastic cap for anchor bolts.

High Strength Bolts:

- ASTM A - 325 type 1 (or equivalent), **galvanized.**

Machine Bolts:

- DIN 933 - Grade 4.6 (or equivalent), **galvanized**.



Sealants & Mastic



Anchor Bolts (Galvanized)
3 nuts & 2 Washers



Bolts & Nuts (Galvanized)



Double Sliding Door + Curved Canopy

Hillside Washer (Galvanized)



Galvanized Fasteners with 19mm EPDM Washer



3 Nuts



Plastic Cover

WHY NORDIC STEEL?

Latest International Codes



IBC 2015 Building Code



AWS 2015 Welding Code



AISC 2016 Design Code



MBMA 2012



AISI 2013 Cold Formed Code

DEFLECTION

VERTICAL DEFLECTION	Main Frame Rafters / Roof Purlins	Deflection Limitation:	Span/180
VERTICAL DEI EECTION	Top running crane (TRC) beams	Deflection Limitation:	Span/600
LATERAL DEFLECTION	Main Frame columns with eave height (EH) up to 9.0 m	Deflection Limitation:	Eave height/60
	Wall Girts	Deflection Limitation:	Span/120

◯ Diversified Steel Structures



MegaBeam





Built-up Curved Rafter



Heavy Column



Double Crane Beam



NordicHybrid™Mezz Joist



NordicHybrid™Rafter







Galvanized Bracing (Anti-Rust & Beautiful)



Galvanized

Cable Bracing





- X bracing: **Galvanized** bracing
- Flange Bracing: **Galvanized** flange bracing



Steel Plates From Japan: NSJ 345







Dimensional & Visual checking and Magnet









Ultrasonic Testing





Best Steel Protection: Free Shot Blasting for All Jobs





Top Class Paint





Dry Film Thickness Checking

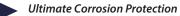






Various Coating Solutions

Silver180[™]





Silver180TM is 180gr/m² Alum, Zinc, Mag Coating Panels made in Japan/Korea Only, Unpainted High Quality Solution

- Best Corrosion Protection for Severe Corrosion Projects involving: Animal Feed/Sheds, Fertilizer Urea, Ammonia, Close proximity to Sea /Ocean
- Not Only Rust Resistant on Flat Surfaces, But also on Cut-End surfaces
- Extremely High Alkaline resistance
- Suitable for Severe Corrosion Environments
- Excellent for Valley Gutters too.

PRODUCT DESCRIPTION:

Base Metal Thickness (mm)	Total Coating Thickness (mm)
0.45	0.50 - roof/ wall
1.45	1.50 - purlin
1.85	1.90 - purlin
2.35	2.40 - purlin

Hyper180[™] is 180gr/m² Alum Zinc Coating with TOP QUALITY High End PVDF Paint to Prevent Color Change

- The AZ180 Coating is Much More Superior than Most Available panels. Excellent Corrosion Protection
- The PVDF paint will Guarantee NO color Change for many years.
- Suitable for Severe Corrosion Environments with NO **Color Change Requirements**

AZ180

For The Most **Severe Corrosion Resistance**

PRODUCT DESCRIPTION:

Base Metal Thickness (mm)	After Paint Thickness (mm)
0.42	0.50
0.52	0.60

Alu-Zinc™ is 150gr/m² Alum Zinc Coating, Unpainted Economical Solution

> • The AZ150 Coating will Guarantee Excellent Corrosion protection

Suitable for Mild Corrosive Environments

PRODUCT DESCRIPTION:

Base Metal Thickness (mm)	Total Coating Thickness (mm)
0.45	0.50

Roof & Purlins Hyper180[™]

No color Change

NORDICCLEAN for antidust and special reflective **PVDF** 20 microns (Best For Color Retentions) Epoxy corrosion inhibitive

Primer coating - 5 microns Chemical treated layer

AL-ZN coating 180gr/m² (both sides) - AL 55% - ZN 45%

Anti - Finger print

150gr/m² (both sides)

AL-ZN coating

Base metal

AL-ZN coating 180gr/m² (both sides) AL 55% - ZN 45%

Chemical treated laver Epoxy corrosion inhibitive

Primer coating - 5 microns

Polyester 7 microns Roof & Wall

Alu-Zinc Bare AZ150 AluZinc

Roof, Wall & Deck

AL 55% - ZN 45% **Base metal**

AL-ZN coating 150gr/m² (both sides) **CHROMATE - FREE** - AL 55% - ZN 45% Anti - Finger print

AluNordic[®]

Super Polyester Painted AZ150 AluZinc

and special reflective Super Polyester Paint 20 Microns Epoxy corrosion inhibitive Primer coating - 5 microns Chemical treated layer AL-ZN coating 150gr/m² (both sides) - AL 55% - ZN 45%

Alu-Zinc (Zinc-Aluminum Coated Layer 150gr/m²) 150gr/m² (both sides) - AL 55% - ZN 45%

NORDICCLEAN for anti-dust

Chemical treated layer Epoxy corrosion inhibitive Primer coating - 5 microns Polyester 7 microns

AluNordic® is 150gr/m² Alum Zinc Coating with Super Polyester High Quality Paint

- The AZ150 Alum Zinc Coating will Guarantee **Excellent Corrosion resistance**
- The Super Polyester Paint is Twice better than the Available Polyester Paint
- The Super Polyester Paint will Guarantee NO Color Change and Help Achieve High Corrosion resistance

PRODUCT DESCRIPTION:

Z Shape

Base Metal Thickness (mm)	After Paint Thickness (mm)
0.42	0.50
0.52	0.60

Roof & Wall

CHROMATE - FREE

GalvaNordic[™] - Zero Spangle Galvanized **Purlin**

Purlin & Girt: C & Z Shape

Hot - dipped zinc coating high tensile steel (275gr/m² total Zinc Coating)



275gr/m²total Zinc Coating (both sides)

275gr/m²total Zinc Coating (both sides)

> ZERO SPANGLE REGULAR SPANGLE **ZERO SPANGLE REGULAR SPANGLE**



Purlin & Deck

Panel Chart









C Shape











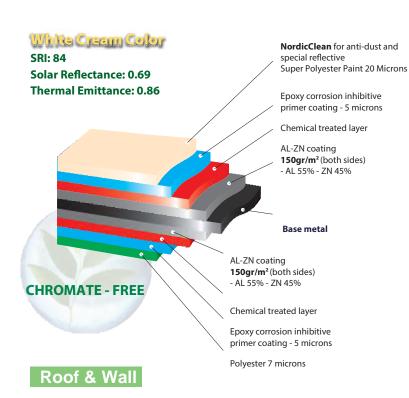




Green Material for Pre-Engineered Buildings

* NordicLeed™

Best Heat Reflectance Coils



NordicLeed™roofing is used to lower surface temperature by absorbing less heat from the sun. NordicLeed™ can reflect the solar heat of a roofing material.

NordicLeed[™] panel (White Cream Color) results in reduced heat retention after a long hot summer day, providing an opportunity to achieve cooler surface temperatures

Increased global warming and government focus on climate change, have directed the attention to the need for greater thermal efficiency especially in a tropical climate.

Green building rating tool such as Leadership in Energy and**Environment Design (LEED)**, require materials with high SRI values. NordicLeed™ offers higher SRI values thus complying to the green building requirements.

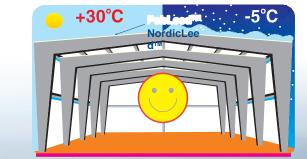
Lower Energy Consumption

NordicLeed[™]solar reflectance technology acts as added insulation in hot weather.

In moderate to hot climates, compared to roofing material of similar color with lower solar reflectance, NordicLeed™ can reduce annual cooling energy consumption.

NordicLeed™ reduces peak roof temperature by up to 5°C for White Cream

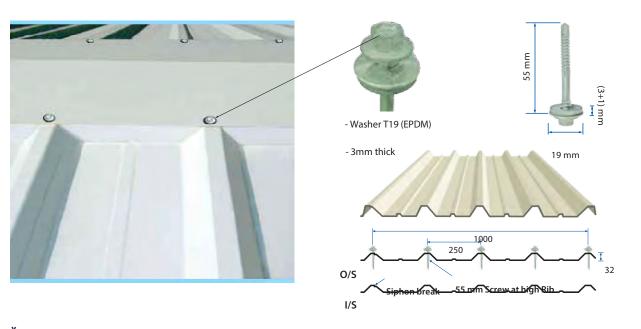
Greater comfort while using less energy helps to reduce cost and is friendlier



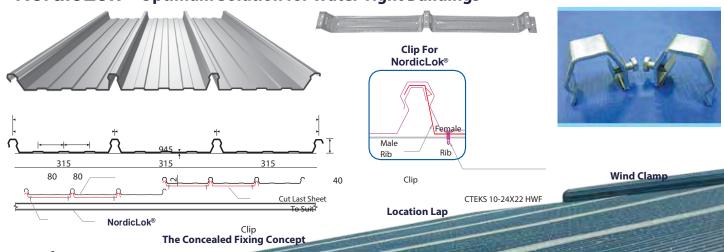
to the environment. B B C Parities eflected Heat of Roof

Various Panel Profiles

* NordicRoof[™]: Roof Sheeting With 55mm Screw, 19mm Wide, 3mm Thick, (EPDM) Washer



NordicLok®- Optimum Solution for Water Tight Buildings



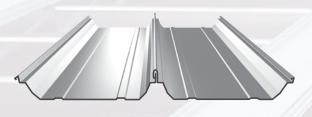
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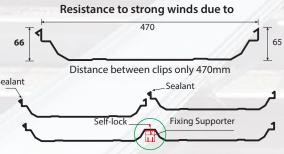
Various Panel Profiles

Water Leak Optimum Solution for Building: Roofing System That Locks & Seams

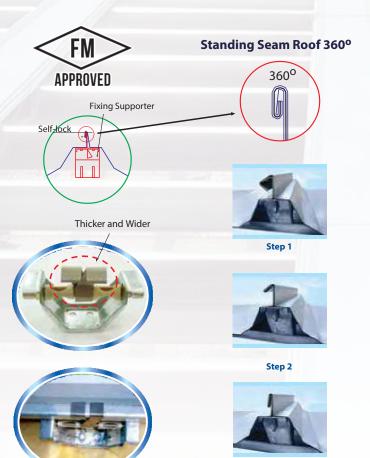
LOK-SEAM®

WARRANTY Against Water Leak

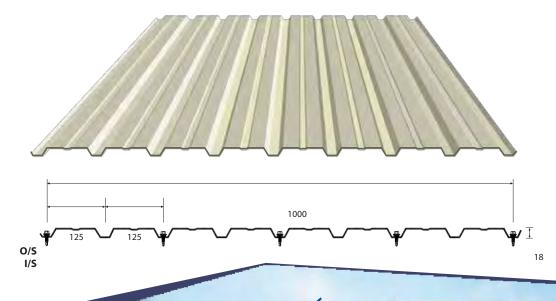




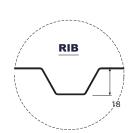








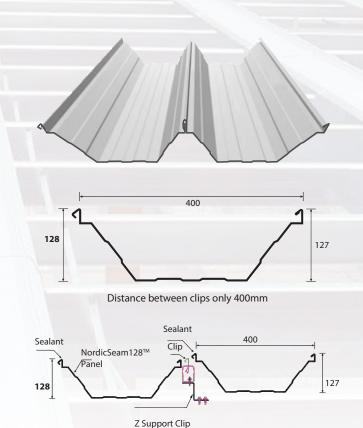




NordicSeam128[™]

(The Ultimate Roof Profile)

WARRANTY Against Water Leak



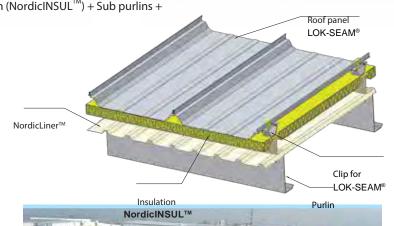


Site Sandwich Panels

 $Components\ include\ LOK-SEAM^{\circledcirc}\ roofing\ +\ Fiber\ glass\ Insulation\ (NordicINSUL^{^{TM}})\ +\ Sub\ purlins\ +\ NordicLiner^{^{TM}}$

Product Description

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	100	0.40	
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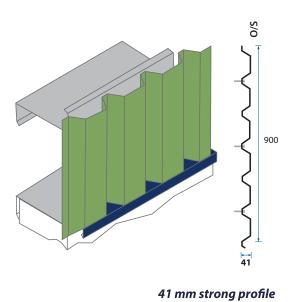




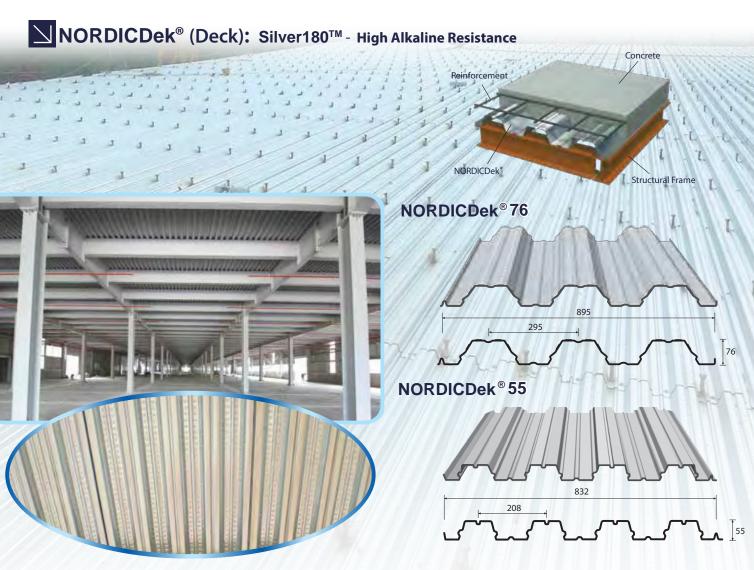


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NORDICWall™: Very attractive and strong wall panel







Thien Nam Sunrise Textile Factory - 42,500 m²

Attractive Building: 8m long, 0.50mm thick Trim, Flashing, Gutter & Downspout



Efficient Ventilation





NordicFo [™]: Energy Effi cient Solutions Without Affecting Environment and Human Health

NordicFoam™ green flame retardant cross-linked polyethylene foam laminated with woven aluminum foil.

WHY NordicFo TM ?

Strong, tough, durable

Quick and easy to install

Reduction in utility bills

Reduce construction waste

Reduce waste of energy and

No maintenance and made to last



Environmental Benefits

CFC's. HCFC's and VOC free No Plasticizer, heavy metals and formaldehyde

Reduce CO₂, emissions

Reusable and Recyclable

Non hazardous

Anti-bacterial and anti-fungal

Fibrous free

Antimicrobial Low smoke emissions

Social Benefits Economical Benefits

3-in-1: Insulation, thermal break Improve indoor air quality and vapour barrier

Improve health

User friendly

Water-resistant and Moisture free

Rodent and insect resistant

Odourless

Friendly to skin

Product Description

5	1.2	100
Thickness (mm)	Width (m)	Length (m)

Our References:

Pharmaceutical Facility Commercial Building

Showroom













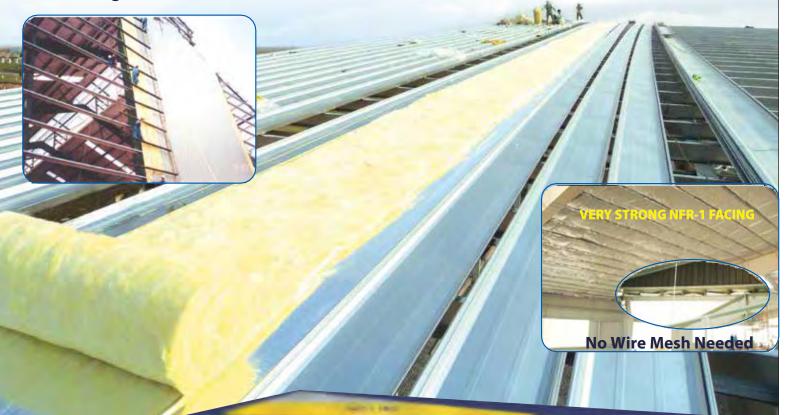








Effi cient Heat Reduction (NordicINSUL™): Insulation with NFR-1 **Facing**



After Sales Service: 10 years structural design warranty



Takako Vietnam Factory (Obayashi - Japan)



34M High, Shipyard (Aker Yard - Norway) - 1,300 MT



Fast 4 Weeks Delivery



Container Skid



Loading

Transportation







Safety - Together We Save Lives













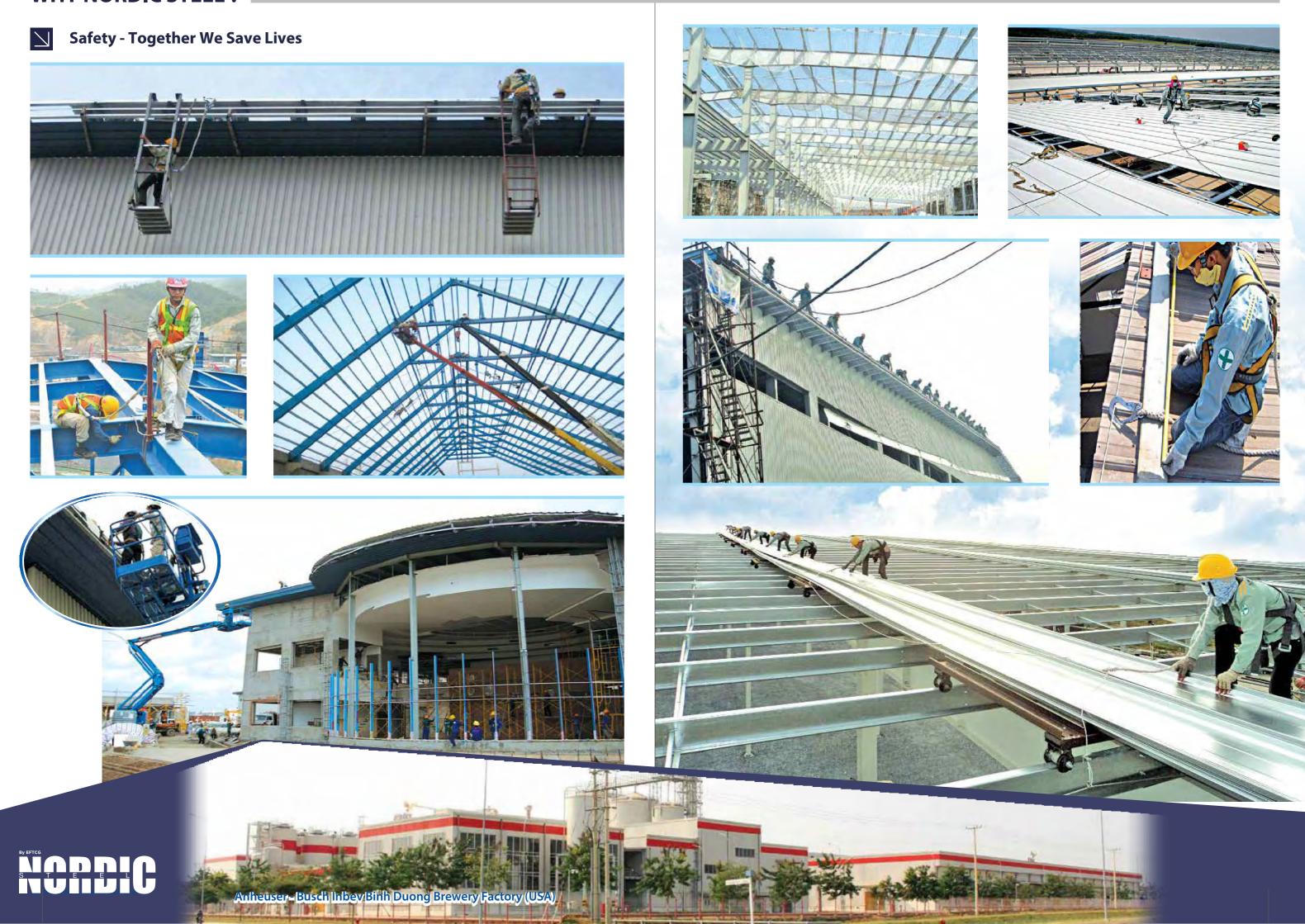












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FCB Warehouse Phase 2 (Thailand)



SJC Concrete Warehouse (Thailand)



Log Thai Factory (Thailand)



CJ Logistics Warehouse (Thailand)



GoldCity Footware Warehouse (Thailand)



Permsin Steel Factory (Thailand)



Rental Warehouse - 3 Buildings (Thailand)



Ticon Logistic Warehouse (Thailand)



Jia Meng Rice Mill (Thailand)



TICON Rental Warehouse (Thailand)



Kaweewan Concrete Factory - Huge Overhead Crane capacity 56MT (Thailand)



TPK Ethanol Warehouse (Thailand)



Hong Tractor at Suphanburi (Thailand)



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Krakatau Osaka Steel Mill (Indonesia)



85% Slope for Fertilizer Storage (PTPupuk Kaltim-Indonesia) - 1,650 MT



Liwayway Factory (Indonesia)



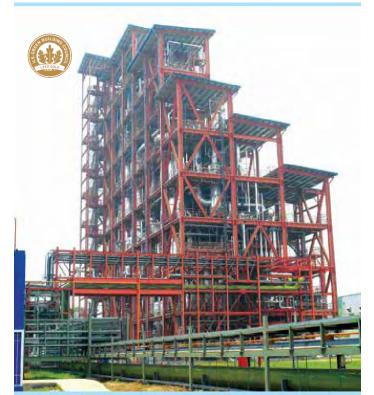
NPK Warehouse, Wilmar Project (Indonesia)



PT. Greenfields Cow Farm (Indonesia)



Flat Storage, Krakatau Bandar Samudera, Cilego (Indonesia)



Fatty Acid Plant (Indonesia)



Minebea Electronic Products Factory (Cambodia)



Dove Soap Plant (Indonesia)



Hydrogenation Plant (Indonesia)



Peng Huoth Golf Club (Cambodia)





C.P Food Factory - 15m Wide Canopy (Cambodia)



TKG Factory (Cambodia)



Narawat Power Plant (Cambodia)



Feed Mill (Cambodia)



Heineken Factory (Cambodia)



Crown Beverage Cans Factory (Cambodia)



Phnom Penh Airport Bus Terminal (Cambodia)



Behn Meyer Warehouse (Malaysia)



Cut & Bend Factory (Malaysia)



Asia Cargo Warehouse (Philippines)



Denso Factory (Cambodia)



Tshung Tsin Basketball Court (Malaysia)



Fertilizer Warehouse (Malaysia)



San Miguel Feedmill, Bulacan, Philippines



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Lufthansa Aircraft Hangar (Philippines)



San Miguel Feedmill (Philippines)



14-floor Workspace Building (Philippines)



La Mamita's Poultry (Polytrade - Philippines)



47M High, Agri King Tower (Philippines)



Manila Bay Resorts (Philippines) (Impressive curved corridor)



Company Table 19 and 19

BonPack Warehouse (Philippines) (Loading bay with huge wide canopy of 12-18m)





Pepsi Cola Bottle Manufacturing Plant (Philippines)



Unilab Factory (Philippines)



Japan Tobacco International Factory (Philippines)



$\overline{\lambda}$

Export to Asia, Middle East, Africa, etc.



Six - Floor NMMC Hospital (Philippines)



Toyota Showroom (Philippines)



Japan Tobacco (Mild Seven Cigarette) Factory (Myanmar)



Golden Lace Daewoo (Myanmar)



Divine Mercy Pilgrim - Domed Roof (Philippines)



Aboitiz Shipyard (Philippines)



Crystal Diamond Factory (Myanmar)



Pahtama Group Distribution Center (Myanmar)



Pacific Asia Link Garment Factory (Myanmar)



Jade Land Warehouse (Myanmar)



Heineken Brewery Factory (Myanmar)



Palm Oil Mill (Yuzana - Myanmar)

Iluvia

THE THE CHEST PERSON AND



Dulwich International School (Myanmar)



Victory Cycle Warehouse



De Heus Factory (Myanmar)



Helicopter Hangar (Myanmar)



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Isuzu Showroom (Laos)



Xe-Pian Xe-Namnoy Hydroelectric Power Plant (Laos)



Ceylon Glass Factory (Sri Lanka)



Seven - Floor Ogce Building (Bangladesh)



Reliance Industries Refinery Factory (India)



Gujarat Glass Factory (India)



Airbase Spectator's Venue (Saudi Arabia)



BSRM Steel Mill (Bangladesh)



AFRICANA Supermarket (Angola)



ASIAN Sport Games (Qatar)



Aircraft Hangars in Sargodha, Kamra, Mianwali, Quetta (Pakistan)



Aircraft Hangar in Karachi (Pakistan)



John Kiessey Warehouse (Australia)



Unison - BHP Petroleum (Australia)



Church (Papua New Guinea)



Forward Sports Production Hall (Pakistan)





45M High, DSM (Switzerland) Nutritional Products Factory



YKK Vietnam Zipper Factory (Hazama - Japan) - 40,000 m²



Medochemie Pharmaceutical GMP License (Cyprus - EU)



Steel Pipe Factory (Nippon Steel - Japan)





Nike Shoes Factory (All Wells - Taiwan) - 2,500 MT



CP Vietnam Factory (Gerico - France) - 1,600 MT



Mezzanine Mainframe for Logistics Center Tokyo (Japan)



Camau 1 & 2 Combined Cycle Power Plant -1,100 MT



96M Clear Span, Nike Shoes Factory (Jooco Dona– Korea)



90M Clear Span for California Waste Solution (USA) ---1,320 MT





Siding Works Project of Mong Duong II Power Plant (Doosan)- 50,000m²
Using Hyper180TM anel (AZ180 Coating + PVDF Paint)



 $Kenda\,Vietnam\,Tyre\,Factory\,(Taiwan)-100,000\,m^2$



230m High, Top Roof Steel Structure for Vietcombank Tower



Binh Minh Plastics Factory (Vietnam)



Kokuyo Stationery Factory (Obayashi - Japan) - 23,000 m²







Nitori Furniture Factory (Vietnam)



LG Electronics Haiphong Factory (GS - Serve One) - 1,620 MT



AHT Steel Mill - 1,000 MT



80M Clear Span for Puma Shoes Factory (Samho – Korea)



Ben Luc Shipyard (SEAS - France)



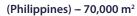
24M High, 30MT Crane Song Thu Shipyard



Automotive Wire Harnesses Factory of Yazaki EDS (Japan) - 85,000 m²



Liwayway (Oishi) Factory





Largest Distribution Center in Vietnam (Unilever – Netherlands) – 71,200 m²



102% Roof Slope, SoyBean Meal Factory (Baria Serece)



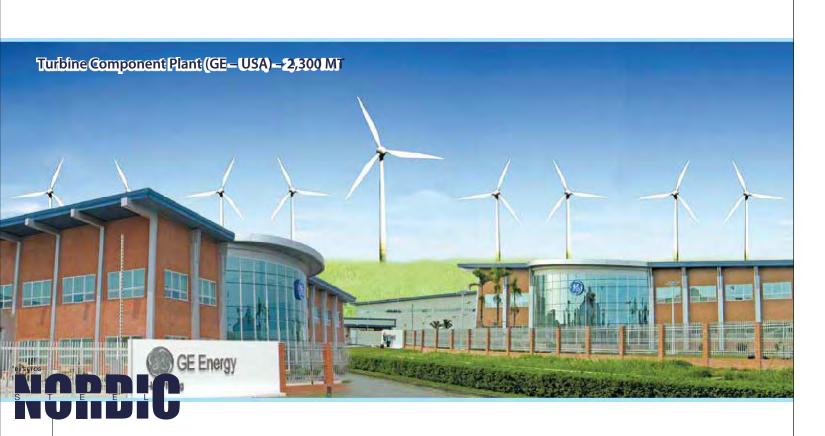
Sankyu Saigon Logistics Center (Kajima - Japan)



Grain Processing Plant (BUNGE) – 710 MT



Truong Giang Fishery Cold Storage (Panels Inside Columns - GMP License)





Inside Tower of Aeon Mall Binh Duong Canary Four - Floor Parking of Aeon Mall PhnomPenh, Cambodia





Petro Vietnam's Dung Quat Bio Ethanol Plant – 1,100 MT



Schenker Logistic Center (Germany) – 15,000 m^2



Stunning Curved Roof Sport Stadium



Curved Roof Agifish Seafood Factory – 8,000 m²



Sunsco Steel Factory (United Steel - Taiwan) - 2,000 MT







GMP Accredited Binh An Seafood Processing Factory – 11,000 m²



Sapporo Brewery Factory (Vinata – Japan)





Scoter North Home Care Liquid (Unilever - Netherlands) 200.000 Man Hours Without a Lost Time Incident

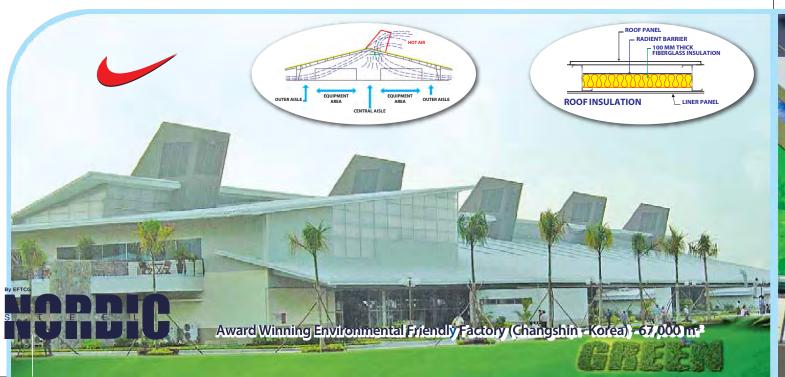




Korea - Vietnam Fertilizer Plant (Vietnam)



Chanh Duong Paper Mill, Huge R.V System







VinFast Automobile Manufacturing Complex (Haiphong - Vietnam) - 14,000 MT



Beesco Vina Binh Phuoc - Water Distribution Tray



Thaco Truong Hai - Thua Thien Hueshowroom



Srithai Ha Noi Plastic Factory



Stroman Plastic Pipe Factory (Tan A Dai Thanh)



TH School (TH True Milk Vietnam)



United Nations International School of Hanoi

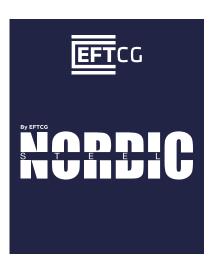


Ojitex Paper Factory









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