

Louda
Industry

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Services
Services

- Equipe multilingue
- Réactivité
- Assistance technique

- *Multilingual team*
- *Reactivity*
- *Technical assistance*

Logistique
Logistics

- Contrôle des pièces avant expédition
- Gestion complète de la logistique

- *Spare parts checking before shipping*
- *Full logistics management*

Achat
Purchasing

- Sourcing international
- Pièces ORIGINE et OEM
- Diversité des marques et des produits
- Compétitivité des prix

- *International sourcing*
- *Genuine parts and OEM*
- *Wide range of brands and products*

Urgence
Urgency

- Optimisation du délai d'approvisionnement
- Mise en place d'une chaîne logistique express
- Suivi renforcé de la commande

- *Delivery time optimization*
- *Establishment of an express logistics chain*
- *Reinforced order follow-up*



Louda
Industry

Expédition internationale de pièces détachées toutes marques.

International export of spare parts.

Qui sommes nous ?

LOUDA INDUSTRY est une centrale d'achat burkinabè spécialisée dans l'exportation de pièces détachées toutes marques et de fournitures industrielles. Nous sommes capables de gérer la chaîne d'approvisionnement dans son intégralité : sourcing, prise en charge des contrôles douaniers dans nos locaux, mise en place de la chaîne logistique la plus adaptée suivant le degré d'urgence (aérien ou maritime), dédouanement local (DOM) et livraison jusqu'au site de production (DOM).

Who are we ?

LOUDA INDUSTRY is a dedicated burkinabe purchasing company specialized in the export of all brands of spare parts and industrial products. We organize daily air and sea shipment according to your urgency.



MINE

CARRY

MACHINES / *MACHINES*

- Engins / *Machines* : CATERPILLAR, LIEBHERR, KOMATSU, DOOSAN, HYUNDAI, ATLAS COPCO, TEREX, BELL, CASE, FH, MOXY, FURUKAWA, KRUPP, VOLVO, JCB
- Composants hydrauliques / *Hydraulic components* : BOSCH, LINDE, PH, SAUER DANFOSS, VICKERS, REXROTH
- Equipements de pelle / *Equipments for excavator*
  - Outils (Brises roches hydrauliques, Pinces…) / *hydraulic hammers*
  - Godets, dents, plaques de blindages / *buckets, teeth, wear plates*
- Pneumatiques, trains de chaînes / *Tires, undercarriages*

TRAITEMENT DU MINERAI / *MINERAL TREATMENT*

- Grilles métalliques ou polyuréthanes / *Metallic or polyurethane screens*
- Equipements de concassage / *Crusher equipments*
- Mâchoires, plaques de blindage / *Jaw crushers, HARDOX*
- Bandes transporteuses, rouleaux simples ou motorisés / *Conveyor belts, conveyor rollers simple or motorised*
- Tous types de pompes (centrifuges, volumétriques) / *All kind of pumps (centrifugals,volumetrics)* : KSB, GRUNDFOS, FLYGT
- Robinetteries / *Valves*: vannes, tuyaux, coudes, raccords / *valves, pipes*
- Roulements de crible / *Screen bearings*



FOURNITURES INDUSTRIELLES
INDUSTRIAL SUPPLIES

TRANSMISSION / *TRANSMISSION*
- Roulements / *Bearings* : SKF, INA, FAG, NTN, SNR, TIMKEN
- Courroies, chaînes, poulies, engrenages / *Belts, chains, pulleys, gearings*
- Moteurs électriques, motoréducteurs, réducteurs / *Electric engines, geared motors* : LEROY SOMER, BONFIGLIOLI, SEW USOCOME, ROSSI
- Éléments hydrauliques/pneumatiques / *Hydraulic / pneumatic components* : JOUCOMATIC, ENERPAC, NORGREN

ELECTRIQUE & ELECTRONIQUE / *ELECTRIC & ELECTRONIC*
- Automates programmables, disjoncteurs, transformateurs, onduleurs / *Automated control systems, breakers, transformers, inverters* : ABB, LEGRAND, MERLIN GERIN, SCHNEIDER, SIEMENS

MOTEURS INDUSTRIELS / *INDUSTRIAL ENGINES*
- Moteurs / *Engines* : CUMMINS, DETROIT DIESEL, MITSUBISHI
- Groupes électrogènes / *Generators* : SDMO, CATERPILLAR, FG WILSON

OUTILLAGES / *TOOLS*
- Outillage général / *Tools* : FACOM, SAM, BETA, BOSH, HILTI
- Soudure / *Welding* : SAF-FRO, OERLIKON, LINCOLN, CASTOLIN
- Matériel de levage : palans, élingues, manilles / *Lifting equipments: hoists, slings, shackles*
- Equipements industriels / *Industrial equipments* : KÄRCHER, ATLAS COPCO, COMPAIR, KAESER, INGERSOLL RAND

EQUIPEMENTS DE PROTECTION INDIVIDUELLE / *PERSONAL PROTECTIVE EQUIPMENT*
- Chaussures de sécurité, gants, combinaisons, casques, masques / *Safety clothing: Safety shoes, gloves, helmets, masks*



TRANSPORT

TRANSPORT

TRANSPORT ROUTIER / *TRANSPORT*

- Camions / *Trucks* : MAN, MERCEDES, DAF, IVECO, SCANIA, VOLVO, RENAULT
- Equipements routiers / *Equipments*
  - Remorques et bennes / *Trailers, skips* : CIF, FRUEHAUF, BENALU, MARREL, ACTM, TRAILOR
  - Grues / *Cranes* : PALFINGER, HIAB, FASSI, HYVA
  - Sellettes / *Fifth wheels* : JOST
  - Essieux / *Axles* : BPW, COLAERT, MERITOR, SAF

MANUTENTION / *HANDLING*

- Grues à tourelles / *Tower cranes* : LIEBHERR, POTAIN
- Grues mobiles / *Mobile cranes* : TEREX, PPM
- Chariots élévateurs / *Forklifts* : MANITOU, HYSTER, FENWICK, KALMAR
- Matériels de levage : palans, élingues, manilles, crochets / *Lifting equipments: hoists, slings, shackles*

MANUTENTION PORTUAIRE / *STEVEDORING*

- Stackers / *Stackers* : TEREX, KALMAR

TRANSPORT MARITIME / *SHIPPING*

- Moteurs marinisés / *Marine engines* : MITSUBISHI, DETROIT DIESEL, MTU, PERKINS, CUMMINS
- Accastillage & Navigation / *Anchoring & electronic*



AGRICULTURE / FORESTIER

AGRICULTURE / FOREST INDUSTRY

AGRICOLE / *AGRICULTURE*

- Tracteurs / *Tractors* : CLAAS, DEUTZ, FENDT, FIATAGRI, JOHN DEERE, MASSEY FERGUSON, NEW-HOLLAND, SAME, VALTRA
- Outils agricoles / *Farming equipments* : AGREX, KUHN, BERTHOUD
- Irrigation / *Irrigation*
  - Motopompes / *Pumps* : LISTER PETTER, DEUTZ, LOMBARDINI, IVECO, CAPRARI, KSB, ROVATTI
- Essieux agraires / *Axles*
- Pneumatiques / *Tires*

FORESTIER / *FOREST INDUSTRY*

- Skidders / *Skidders* : CATERPILLAR, JOHN DEERE, CLARK
- Pneumatiques, chaînes de protection & traction / *Tires, chains*
- Treuils, câbles, crochets / *Hoists, cables, hooks*
- Outillages / *Tools*
  - Tronçonneuses / *Chainsaws* : STIHL



USINE À BÉTON
CONCRETE PLANT

CENTRALE À BÉTON / *CONCRETE PLANTS*
- Usines / *Concrete Plants* : IMER, LIEBHERR
- Malaxeurs / *Mixers* : OMG, TEKA
- Eléments d'usures : pales, bras, racleurs, blindage de cuves / *Wear plates, blades, scrapers*

USINE / *PLANT*
- Bandes transporteuses, rouleaux, grilles de crible / *Conveyor belts, conveyor rollers, wire screens*
- Moteurs, réducteurs, motoréducteurs électriques / *Motors, geared motors* : LEROY SOMER, BONFIGLIOLI, ROSSI
- Capteurs, variateurs, pesons / *Sensors, variators, weighting devices* : SCHNEIDER, LEGRAND, TELEMECANIQUE

TRANSPORT / *TRANSPORT*
- Camions / *Trucks* : MERCEDES, MAN, RENAULT, IVECO, DAF, VOLVO, SCANIA
- Toupies / *Mixer trucks* : LIEBHERR, CIFA
- Pompes / *Pump trucks* : PUTZMEISTER, SCHWING
- Tuyauteries, balles de nettoyage / *Pipes, cleaning balls*



1. MINING CHEMICALS

1.1. Mining Product Summary

Process	Product	Functionality
Size Reduction		
Blasting	Acetic Acid	Additive in industrial explosives
	Sodium Nitrate	Initiator in industrial explosives
	Sodium Nitrite	Initiator in industrial explosives
	Sodium Perchlorate	Initiator in industrial explosives
	Thiourea	Initiator in industrial explosives
Grinding	ACTION Mill Degreaser	Fast and effective dynamic mill gear cleaning under full load conditions
	Cast Chrome Grinding Balls	High hardness and exceptional abrasion resistance
	Forged Steel Grinding Balls	Full size media range for cost effective grinding
Separation		
Leaching	Activated Carbon	Gold extraction via adsorption of gold cyanide solution
	Anhydrous Ammonia	Lixiviant for nickel. Precipitant in uranium extraction
	Caustic Soda (Liquor & Pearl)	Elution stripping of gold adsorbed onto activated carbon
	Ferrous Sulphate	Cyanide detoxification in gold mining process
	Hydrochloric Acid	Pre-elution treatment of activated carbon in gold mining
	Lead Nitrate	Accelerator in gold cyanidation
	Sodium Bisulphite (SBS)	Cyanide detoxification in gold mining
	Sodium Chlorate	Oxidant in uranium extraction
	Sodium Cyanide	Gold extraction using cyanidation heap leach, CIP or CIL processes
	Sodium Metabisulphite (SMBS)	Cyanide detoxification in gold mining
	Sulphuric Acid	Lixiviant for uranium and nickel. Cyanide destruction in gold mining
	Zinc Powder	Gold extraction via Merrill-Crowe precipitation of gold cyanide solution
Flotation		
	Copper Sulphate Pentahydrate	Activator for sphalerite (ZnS), pyrite (FeS2) in base metal ores
	Lead Nitrate	Activator for stibnite (Sb2S3) in antimony ores
	DSP collectors	Range of specialty collectors
	Potassium Amyl Xanthate (PAX)	Strong, unselective collector
	Sodium Ethyl Xanthate (SEX)	Weak, highly selective collector
	Sodium Isobutyl Xanthate (SIBX)	Good general purpose collector
	Sodium Isopropyl Xanthate (SIPX)	Selective collector with higher recovery than SEX
	Carboxymethyl Cellulose (CMC)	Depressant for talc and gangue minerals in base metal ores
	Citric Acid	Organic Acid gangue depressant for ores containing oxide minerals
	Dextrin	Depressant for carbon and galena (PbS) minerals in base metal ores
	Guar Gum	Depressant for gangue minerals, particularly silicate in base metal ores
	Sodium Cyanide	Depressant for pyrite (FeS2), sphalerite (ZnS) in base metal ores
	Sodium Metabisulphite (SMBS)	Depressant for pyrite (FeS2) and galena (PbS) for copper-lead-zinc ores
	Sodium Sulphite	Depressant for pyrite (FeS2) in copper-zinc ores
	Zinc Sulphate	Depressant for base metal ores
	Soda Ash	Dispersant and pH control
	DSF Frothers	Range of specialty frothers
	Methyl Isobutyl Carbinol (MIBC)	Wide application general purpose frother
	Sodium Hydrosulphide	Sulfidising agent for oxide minerals
	Sodium Sulphide	Sulfidising agent and depressant for base metal ores
Dewatering		
	Aluminium Sulphate	Inorganic flocculant for water treatment
	Ferric Chloride	Inorganic flocculant for water treatment
	Ferric Sulphate	Inorganic flocculant for water treatment
	Polyacrylamide Flocculants	Range of nonionic, anionic and cationic polymers for thickening applications
	Polyaluminium Chloride	Inorganic flocculant for high turbidity water treatment
Refining		
Smelting	Anhydrous Borax	Flux in gold refining
	Lead Oxide (Litharge)	Flux in gold refining
	Silica Flour	Flux in gold refining

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1.3.2. Sodium Cyanide (Briquettes)

Sodium cyanide is most frequently used in precious metals mining and recovery. It also
provides one of the most common and effective methods of leaching gold and other
precious metals form the ore.
HCN is a volatile liquid that can be difficult to handle, store and transport.
Conversely, sodium cyanide is a solid and relatively stable material that
poses no such challenges and is, therefore, the most common storage form of CN.

Applications



- Mining and recovery of precious metals
- Organic Synthesis
- Surface treatment
- Other Applications

Constituent	Specification
Sodium Cyanide	Min. 98%
Alkalinity as NaOH	0,1 – 0,8%
Ces produits ne sont vendus qu'à des clients sous licence	

1.3.3. Borax Decahydrate

$Na_2B_4O_7.10H_2O$ - Disodium Tetraborate Decahydrate

Borates are also used to facilitate the attack of gold ore at a lower temperature and to make the slag more fluid at the furnace operating temperature, thus reducing viscosity. The benefits of Borax in gold refining are numerous:

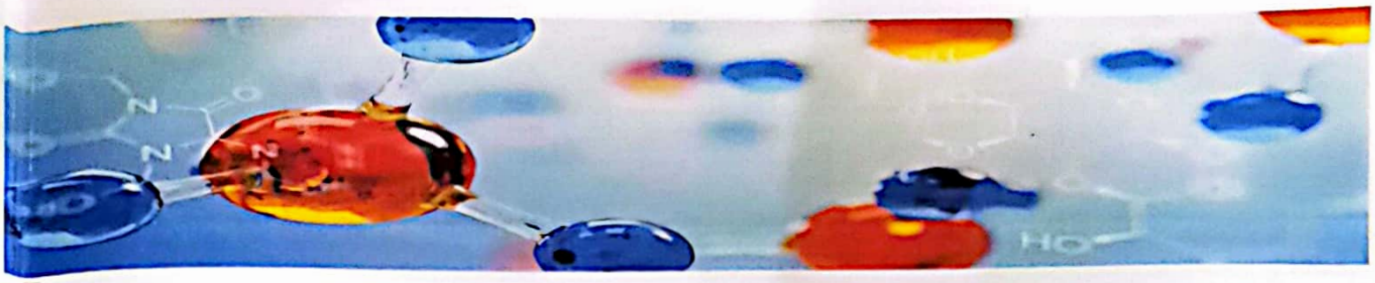
- Recover precious metal content with minimal loss to slag
- Promote a substantial reduction in the sintering temperature
- Produce easily fusible borates
- Prevent combustibility and minimize fuming
- Form highly fluid slags with only mild attack on refractories
- Easily thickens slag if necessary and slammed
- Avoid intumescence and puffing



Chemical Specification

Component	Content
B2O3	36.47-38.50 %
Equivalent $Na_2B_4O_7.10H_2O$	99.90-105.45 %
Na_2O	16.24 -17.14 %
SO_4	135 ppm max.
Cl	70 ppm max.
Fe	10 ppm max.

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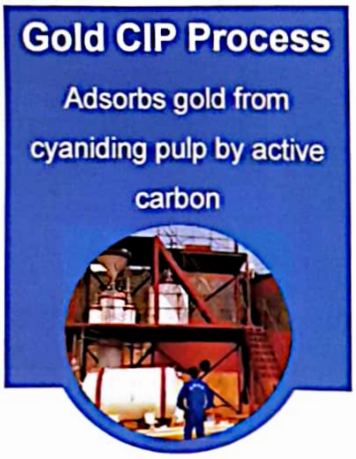
1.3.4. CNFREE Eco-friendly Gold Leaching Reagent

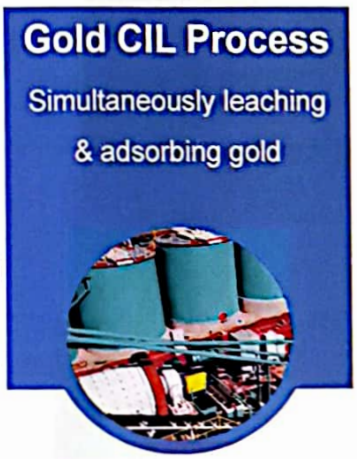
From Traditional Cyanidation Gold Extraction To Eco-friendly Gold Extraction

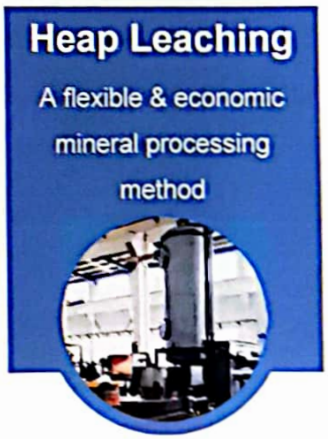


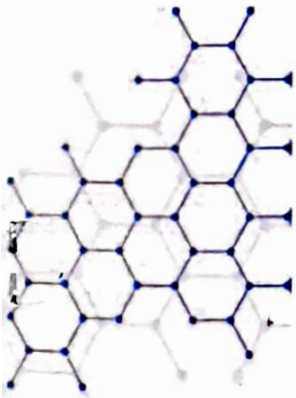
- According to statistics, more than 80% gold mines in the world use cyanide gold extraction process, while 85% of them use sodium cyanide to extract gold. However, cyanide is a highly poisonous and dangerous chemical, and any accidents in transportation, storage and usage will resuilt in serious consequences.
  Therefore, many countries and states have explicitly banned or restricted the use of sodium cyanide in gold extraction and the global gold extraction industry urgently needs an environmental gold extraction agent that can completely replace cyanide.

- **Application Process**: exactly the same as conventional cyanidation process.









Other Notes:

- A better using effect can be obtained when slurry temperature over 15 °C.
- PH value and CNFREE concentration should be measured at regular time during the gold immersion process.
- It's better not to add aiding leaching agents simultaneously.



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3. PRODUITS CHIMIQUES DE L'EAU

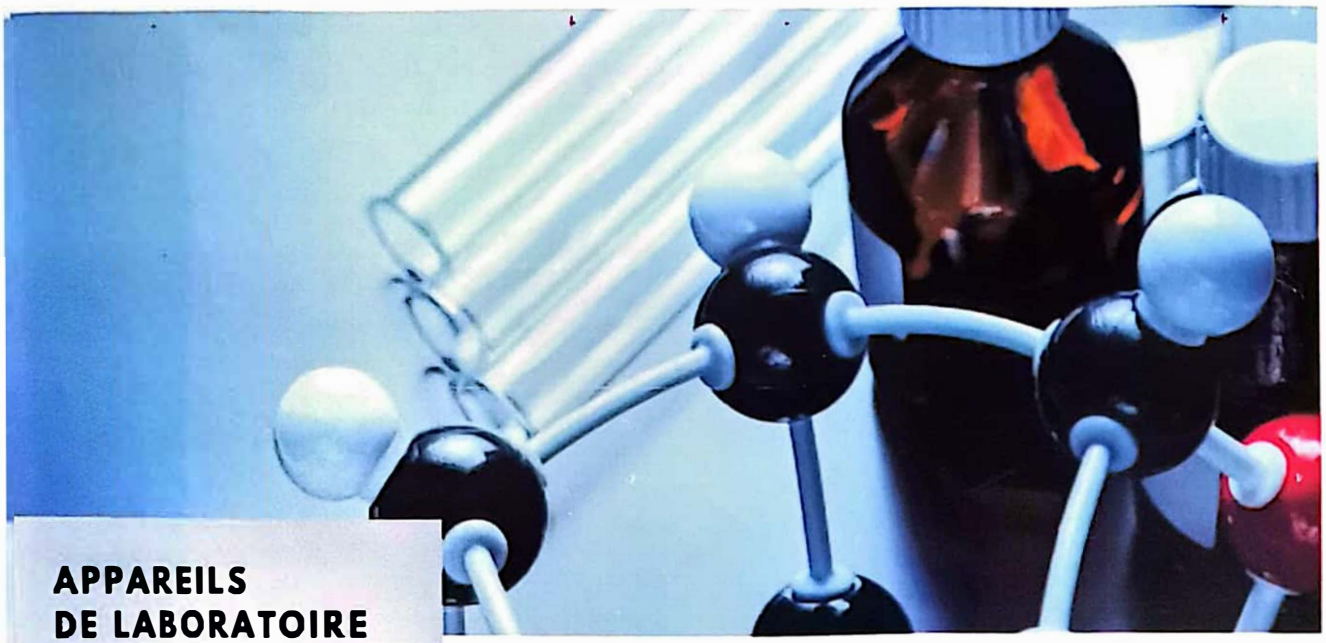
Algaecides
Antifoams
Biocides
Boiler water chemicals
Coagulants
Corrosion inhibitors
Disinfectants
Flocculants
Neutralizing agents
Oxidants
Oxygen scavengers
pH conditioners
Resin cleaners
Scale inhibitors

FAST AND RELIABLE SERVICE

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FOURNITURES DE LABORATOIRE

Appareils de laboratoire & Produits chimiques de laboratoire

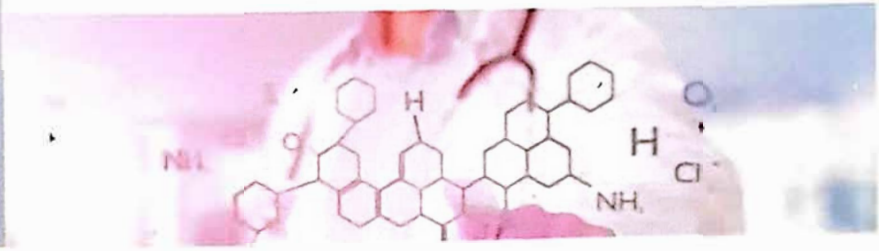


APPAREILS DE LABORATOIRE

Nous fournissons tous les équipements, fournitures et
outils de laboratoire nécessaires aux laboratoires et établissons également
l'infrastructure pour les laboratoires ainsi que les laboratoires qualifiés pour obtenir des certificats de qualité internationaux

PRODUITS CHIMIQUES DE LABORATOIRE

Notre société
possède une usine de fabrication et d'emballage de produits chimiques de
laboratoire et nous sommes également des
de nombreuses sociétés
internationales produisant des produits chimiques de laboratoire de toutes
sortes



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HIGH CHROME BALLS / BOLAS FUNDIDAS DE ALTO CROMO / BOULETS À HAUTE TENEUR EN CHROME

We supply High Chrome Grinding Balls with a wide range of specifications and according to customer's requests, including cylpebs.

Suministramos bolas de acero de alto cromo con un amplio rango de especificaciones y según los requerimientos del cliente, incluyendo cylpebs.

Nous fournissons des boulets à haute teneur en chrome avec une large gamme de spécifications en accord avec les besoins du client, y compris la fourniture de cylpebs.

Chemical Composition / Composición química. / Composition Chimique. (*)

(%)

	C	Si	Mn	Cr	S	P	Mo
High Cr	2.0-3.5	≤1.0	≤1.5	19-22	≤0.10	≤0.10	≤1.0
	2.0-3.5	≤1.0	≤1.5	15-18	≤0.10	≤0.10	≤1.0
Mid Cr	2.0-3.5	≤1.0	≤1.5	5-15	≤0.10	≤0.10	≤1.0
Low Cr	2.0-3.5	≤1.0	≤ 1.5	1.5-4.5	≤0.10	≤0.10	≤1.0



General specifications/ Especificaciones generales / Spécifications générales

Item	HRC	Microstructure	Breakage	Diameters
		Microestructura	Rotura /Rupture	Diámetros
High Cr	55-65	M + C	≤1.0%	12-130 mm
	55-65			
Mid Cr	55-65	M + C		
Low Cr	50-55	M + C		



GRINDING RODS / BARRAS LAMINADAS Y ENDURECIDAS CON TRATAMIENTO TÉRMICO / BARRES DE BROYAGE TRAITÉES THERMIQUEMENT

We supply grinding rods/bars in special Steel quality with a heat treatment to reach the desired Hardness, providing a wide range of specifications and according to customer's requests.

Suministramos barras de acero en calidades especiales sometidas a tratamiento térmico para su endurecimiento, con un amplio rango de especificaciones y según los requerimientos del cliente.

Nous fournissons des barres en acier élaborées dans des nuances spéciales soumises à un traitement thermique dans le but de faire augmenter leur dureté, avec une large gamme de spécifications et toujours en accord avec les besoins du client.

	%						Hardne ss/ Dure za / Dure té		Di me nsi ons / Di me nsi one s	
	C	Cr	Si	Mn	S	P	HB	HRC	Ø	L
Standard Hardness / Dureza Estándar / Dureté Standard	0. 5- 1. 0	0. 4- 1. 0	0. 15- 0. 8	0. 5- 1. 2	≤0. 06	≤0. 06	280- 320	29- 34	50- 100 m m	3000-6000 mm
Hi gh Hardne ss / A l ta Dure za / Haut Dureté	0. 7- 1.0	0. 3- 1.0	0.17-0.37	0.7- 1.0	≤0. 04	≤0.04	325- 350	35- 37	50- 100 m m	3000-6000 mm
Very High Hardness / Dureza Muy Alta / Très Haut Dureté	0. 7- 1. 2	1. 0- 1. 6	0.15- 0.6	0. 3- 1.0	≤0. 05	≤0. 05	600- 682	60- 65	50- 100 m m	3000-6000 mm



(*) We also offer other chemical compositions as per customer's request. Podemos ofrecer composiciones químicas según requerimientos del cliente. Nous pouvons offrir des compositions ad hoc basées sur les besoins du client.

FORGED GRINDING BALLS / BOLAS FORJADAS / BOULETS FORGÉS

We supply Forged Grinding Balls with a wide range of specifications and according to customer's requests. We work in partnership with a variety of first class mills, using state-of-the-art technology and manufacturing from vacuum degassed steel to austhenized furnaces to reduce internal ball stress

Suministramos bolas de acero forjadas con un amplio rango de especificaciones y según los requerimientos del cliente. Trabajamos en colaboración con un abanico de fabricantes de primer nivel, con la última tecnología y fabricando con acero desgasificado al vacío incluyendo hornos de austenizado para reducir tensiones internas de las bolas.

Nous fournissons des boulets en acier forgé avec une large gamme de spécifications en accord avec les besoins du client. Nous travaillons en partenariat avec plusieurs fabricants de premier niveau, avec la dernière technologie et en fabricant à partir de matériel soumis à desgazage sous-vide de l'acier jusqu'à la réduction de tensions internes dans les boulet avec four d'austénitisation.

Chemical Composition. General Specifications/ Composición Química. Especificaciones Generales
Composition Chimique. Spécifications Générales (*)

(%)

C	Cr	Si	Mn	S	P	Cu	Mo	Ni
0.6-1.2	≤1.2	0.15-0.6	0.6-1.5	≤ 0.04	≤0.04	≤0.1	≤0.25	≤0.1

Hardness / Dureza / Dureté

	SUPRA QUALITY		STANDARD QUALITY	
	Ø 20-115 mm	Ø ≥125 mm	Ø 20-115 mm	Ø ≥125 mm
HRC	60-65	56-62	55-60	50-55

Diameters /Diámetros/Diamètres: 20 – 150 mm

We supply a 60 HRC flat hardness profile for balls up to 100 mm diameter. Should you need other hardness profile, please contact us.

Nuestro estándar de dureza es de flat profile 60 HRC para bolas de hasta 100 mm. En caso de necesitar otro tipo de durezas consulten con nosotros.

Nous travaillons avec un standard de dureté flat profile de 60 HRC pour boulets de diamètre jusqu'à 100 mm. En cas de besoin d'un autre profil de dureté, consultez-nous.

(*) We also offer other chemical compositions as per customer's request. Podemos ofrecer composiciones químicas según requerimientos del cliente. Nous pouvons offrir des compositions ad hoc basées sur les besoins du client.





TECHNICAL ASSISTANCE / ASISTENCIA TÉCNICA / SUPPORT TECHNIQUE

We provide a specialized technical assistance to Mining companies for grinding process plants with highly experienced team who can analyze and optimize metallurgical processes. Among others we can offer the following services:

- Training
- Technical services for plant start-up, stabilization and continuous improvement
- Advice for optimal grinding ball sizes
- Calculation of initial mill charge and follow-up on Suprasteel grinding media tests
- Process control and monitoring
- Technical advice for flotation, leaching and water treatment processes
- Tailor-made development of grinding ball specifications

Proporcionamos a nuestros clientes mineros un servicio especializado de asistencia técnica en plantas de procesamiento, con técnicos cualificados que analizan y optimizan los procesos metalúrgicos. Entre otros ofrecemos los siguientes servicios:

- Formación especializada
- Asesoramiento en la puesta en marcha, estabilización y mejora de plantas de proceso
- Cálculo del tamaño óptimo de bola para la molienda
- Cálculo de la carga inicial del molino y seguimiento de tests de medios de molienda de Suprasteel
- Control y auditoría de procesos
- Asesoramiento en procesos de flotación, lixiviación y tratamiento de aguas
- Desarrollo de especificaciones en medios de molienda a medida del cliente.

Nous mettons à la disposition de nos clients notre expérience du broyage, offrant ainsi un support technique complet pour leurs process au sein de leurs usines. Grâce à notre équipe de professionnels hautement qualifiés nous sommes capables de fournir à nos clients un support continu pour l'analyse et l'optimisation des process métallurgiques. Nous offrons, par exemple, les services suivants:

- Formation
- Support technique pour démarrage de site, stabilisation et amélioration des process de broyage
- Conseil pour le choix du diamètre optimal de vos boulets de broyage.
- Calcul de charges initiales et suivi des tests de corps broyants
- Contrôle et surveillance de vos process.
- Avis technique pour la flottation, la lixiviation et les procédés de traitement de l'eau.
- Mise au point de spécifications sur mesure pour les boulets de broyage.





QUALITY, PACKING AND LOGISTICS

CALIDAD, EMBALAJE Y LOGÍSTICA

QUALITÉ, EMBALLAGE ET LOGISTIQUE

All our products are strictly verified by our own laboratory. Under customer request, we also carry out quality analysis by independent Surveyors.
Packing: big bags or steel barrels of approx. 1 ton each.
Grinding rods: bundles of 1.5-3 tons each.
We supply to any port in the World within the shortest delivery term.

Todos nuestros productos son sometidos a estrictos controles de calidad por nuestro propio laboratorio. A solicitud del cliente, también realizamos análisis de calidad por Compañías de Inspección independientes.
Embalaje: big bags o barriles metálicos de 1 ton.
Barras de molienda: atados de 1.5-3 tons.
Suministramos en cualquier puerto del mundo en los plazos de entrega más cortos.



Tous nos produits sont soumis à des contrôles stricts de qualité réalisés par notre propre laboratoire. A la demande du client, nous pouvons également faire pratiquer des analyses qualité par des Sociétés d'Inspection indépendantes.
Emballage : en big bags ou en fûts métalliques d'1 Tonne.
Barres de broyage: paquets de 1,5-3 Tonnes.
Nous livrons dans n'importe quel port du monde et dans les délais les plus courts.

IK4 AZTERLAN
Research Alliance

CIF – R4800502I ALIENDALDE AUZUNEA Nº6
E-48200 DURANGO (BIZKAIA) TEL. +34 94 6215470

METALURGIA IKERKETA ZENTROA
CENTRO DE INVESTIGACION METALURGICA
METALLURGY RESEARCH CENTRE

INFORME 386234B
REPORT

Cliente / Customer
Suprasteel Worldwide S.L. Oviedo - Spain

Recepción del material Date of receipt	31/01/19	Emisión del informe Date of issue	21/02/19
Material recibido Received material	Un lote de 2 BOLAS de Ø~70mm // A batch of 2 BALLS Ø ~ 70mm		
Datos aportados por el cliente Info given by the customer	Pedido / Order: 4519002220 Referencia / Reference: nº 1 y nº 2. Otros datos / Other info: En el presente informe se analiza la BOLA identificada como nº 2 In the present report the BALL identified as nº 2 is analyzed		

CARACTERÍSTICAS QUÍMICAS / CHEMICAL PROPERTIES

Análisis químico (%) / Chemical analysis (%)

C	Si	Mn	P	S	Cr	Mo	Ni	Cu	Al	Ti	Nb	V
0,82	0,37	0,79	0,015	0,012	0,36	0,049	0,20	0,35	0,020	0,024	<0,005	<0,024
±0,01	±0,01	±0,01	±0,001	±0,001	±0,01	±0,004	±0,01	±0,01	±0,001	±0,003	–	–

Incertidumbre expandida calculada para un intervalo de confianza del 95% / Expanded uncertainty calculated for 95% confidence interval // Análisis realizado 12/02/19 s/P-101 y el 18/02/19 s/P-343 // Analysis carried out on 12/02/19 according to P-101 and on 18/02/19 according to P-343

CARACTERÍSTICAS MECÁNICAS / MECHANICAL PROPERTIES



Distancia (mm) / Distance (mm)	Ensayo de dureza Rockwell / Rockwell hardness test					
	HRC LINEA 1					
	Valores individuales / Individual values			Valor medio / Average value	Factor / Factor	Dureza Volumétrica(*) / Volumetrical Hardness(*)
SUPF. (3)	63,3	63,9	63,8	63,7	0,289	18,4
¾ R (9)	63,5	63,9	64,2	63,9	0,437	27,9
½ R (18)	63,4	63,9	63,8	63,7	0,203	12,9
¼ R (27)	63,0	63,9	63,8	63,6	0,063	4,0
CENT. (35)	63,3	63,6	63,7	63,5	0,009	0,6
				±1,3HRC		63,8

Incertidumbre expandida calculada para un intervalo de confianza del 95% / Expanded uncertainty calculated for 95% confidence interval
Ensayo realizado el 14/02/19 según UNE-EN ISO 6508-1:2015/Test carried out on 14/02/19 according to UNE-EN ISO 6508-1:2015

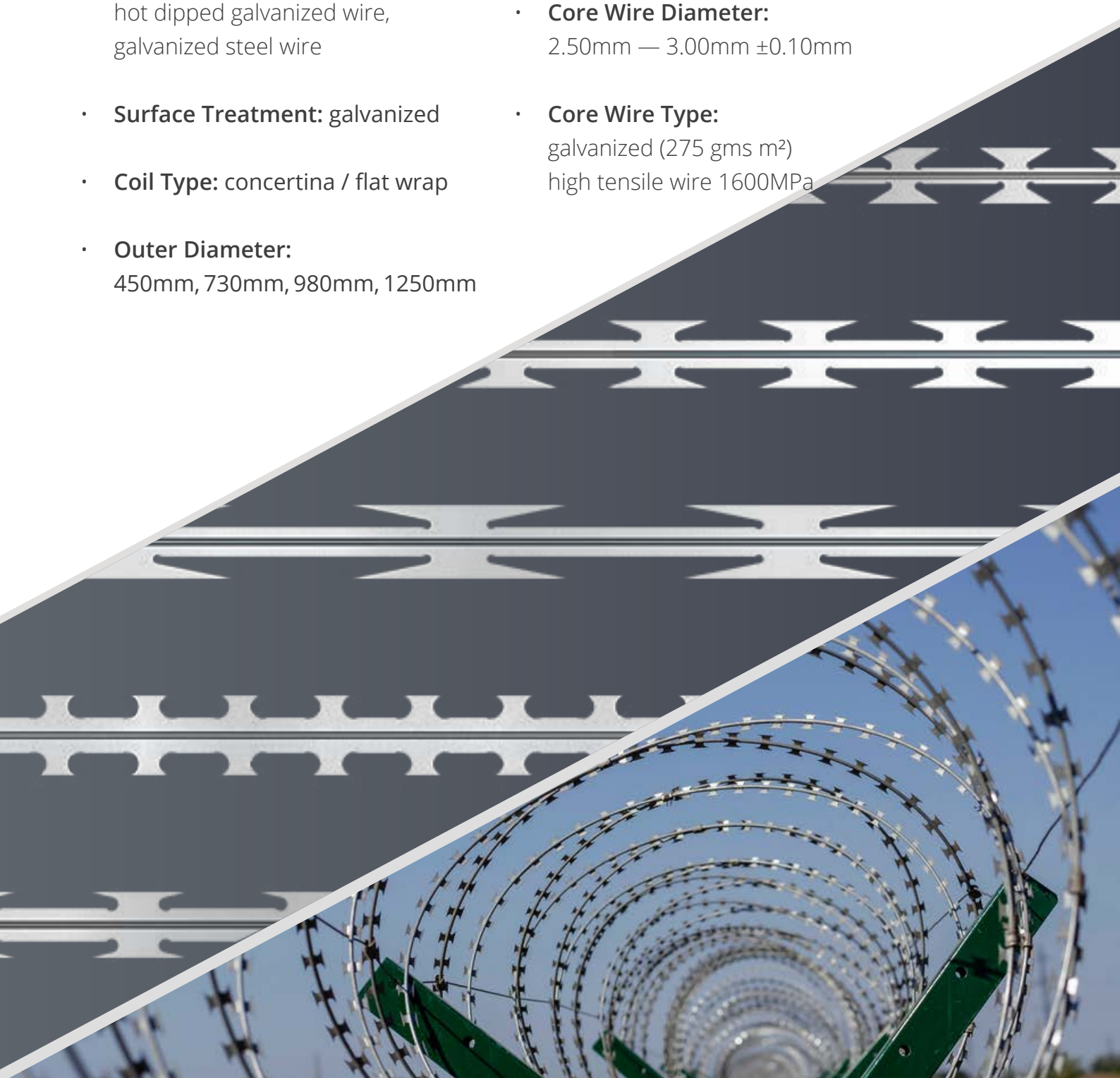
ENAC



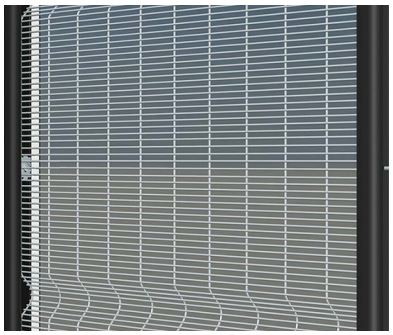
CONCERTINA COILS & FLAT WRAP AS A FENCE TOPPING

SPECIFICATION:

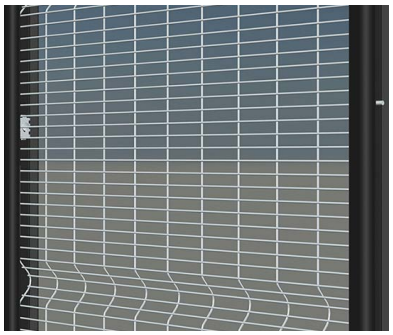
- **Razor Type:** cross wire
- **Material:**
  hot dipped galvanized wire,
  galvanized steel wire
- **Surface Treatment:** galvanized
- **Coil Type:** concertina / flat wrap
- **Outer Diameter:**
  450mm, 730mm, 980mm, 1250mm
- **Blade Thickness:**
  0.30mm — 0.50mm ±0.10mm
- **Core Wire Diameter:**
  2.50mm — 3.00mm ±0.10mm
- **Core Wire Type:**
  galvanized (275 gms m²)
  high tensile wire 1600MPa



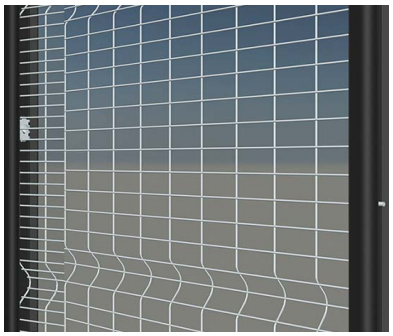
358 HIGH-SECURITY MESH



mesh size 100mm x 12.7mm



mesh size 100mm x 25.0mm



mesh size 100mm x 50.0mm

SPECIFICATION:

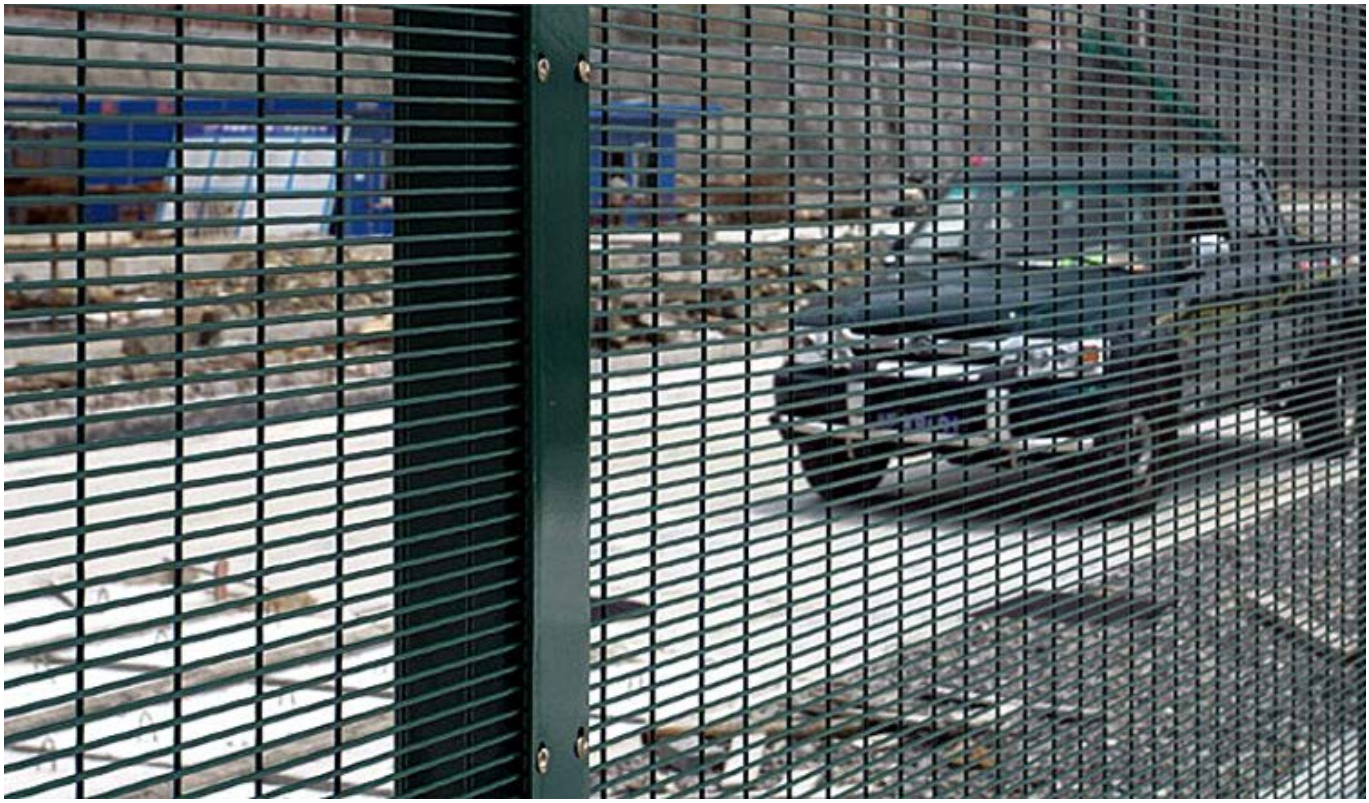
- **Installation Height:**
  1800mm, 2100mm, 2400mm, 3000mm
- **Embedded Post Height:**
  2400mm, 2700mm, 3000mm, 3600mm
  (600mm below the ground level)
- **Post Center Distance:** 3000mm
- **Distance Between the Horizontal Wires:**
  12.7mm ±1.0mm, 25.0mm ±1.0mm, 50.0mm ±1.0mm
- **Distance Between the Vertical Wires:** 100 ± 3.0mm
- **Core Diameter of the Horizontal Galvanized Wire:**
  4.00mm ± 0.10mm
- **Core Diameter of the Vertical Galvanized Wire:**
  4.00mm ± 0.10mm
- **Metallic Coating:**
  the wires are pre galvanized and the min zinc weight for the horizontal and vertical wires is 250gsm
- **Powder Coating / PVC Coating**



WIRE SPECIFICATION:

- **Wire Sizes:** from 3mm to 6mm
- **Wire Tensile:** 450mpa to 650mpa
- **Wire Coating:** Z275 galv or Aluzinc
- **Weld Strength:** 70% – 80% of material
- **Coating Options:** Plascoat PPA 571
- **Colors:** black, green, blue, brown, grey
- **Clamps:** galvanized or stainless steel
- **Screws:** galvanized or stainless steel
- **Post Thickness:** from 2mm to 3mm
- **Post Coating:** galvanized hot dipped, plascoat PPA 571

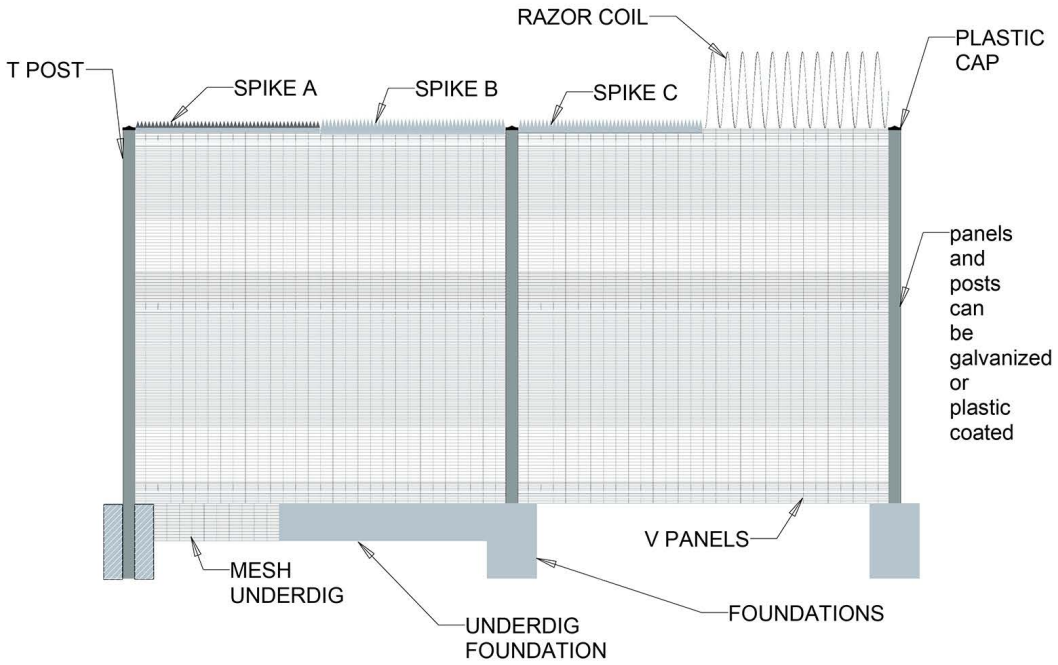


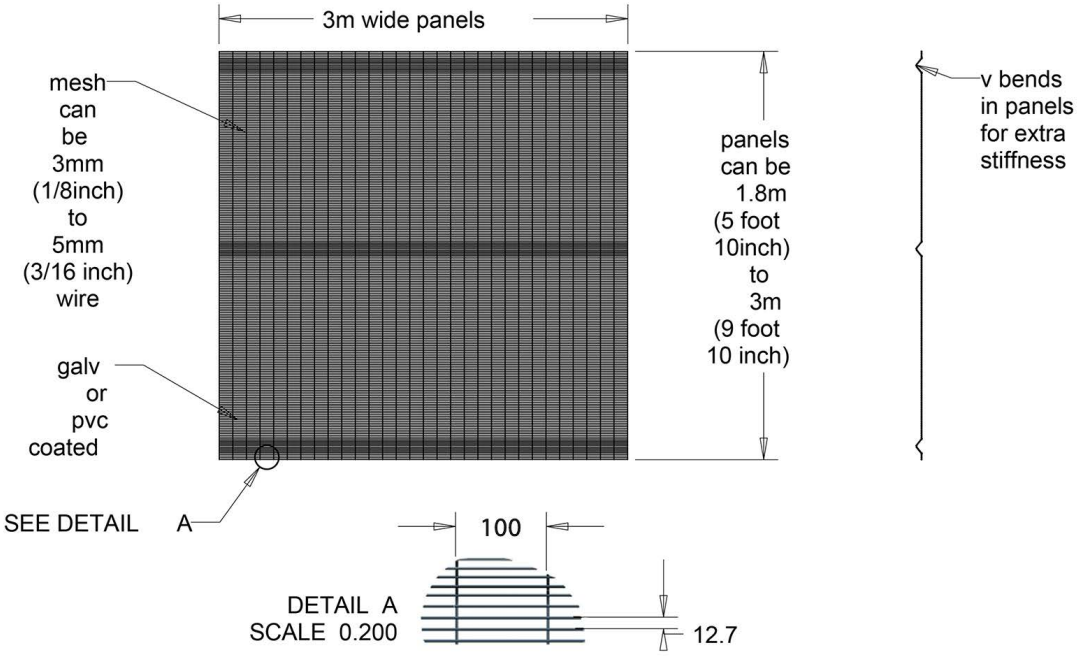


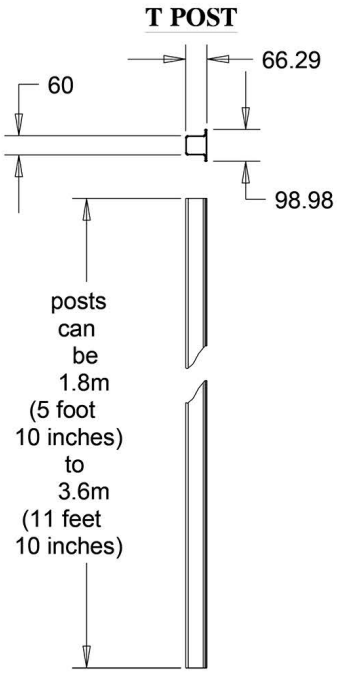


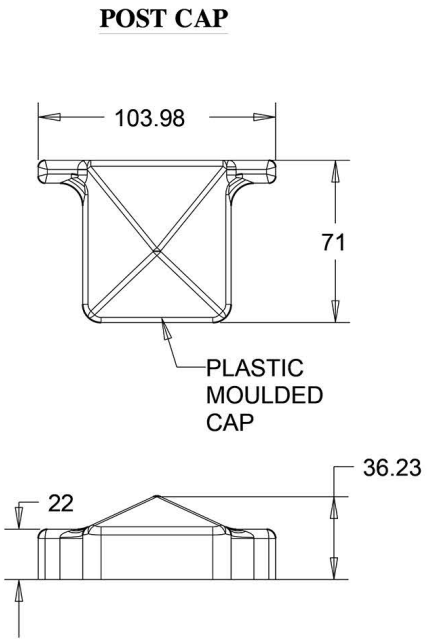


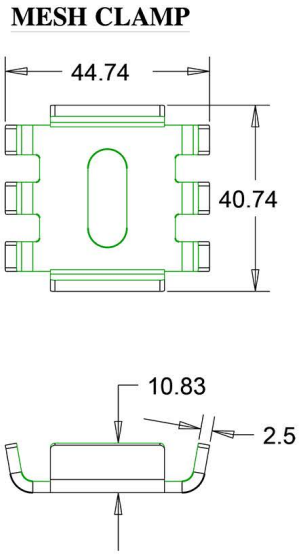


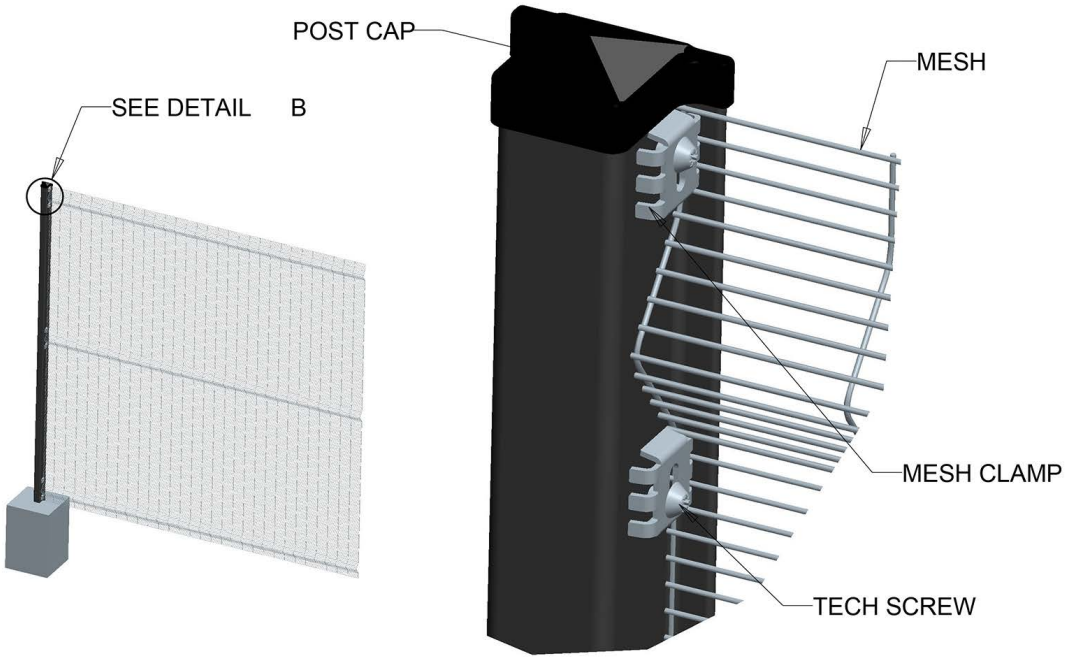

RAZOR COIL
PLASTIC CAP
T POST
SPIKE A
SPIKE B
SPIKE C
panels and posts can be galvanized or plastic coated
V PANELS
MESH UNDERDIG
UNDERDIG FOUNDATION
FOUNDATIONS


3m wide panels
mesh can be 3mm (1/8inch) to 5mm (3/16 inch) wire
galv or pvc coated
SEE DETAIL A
panels can be 1.8m (5 foot 10inch) to 3m (9 foot 10 inch)
v bends in panels for extra stiffness
100
DETAIL A
SCALE 0.200
12.7

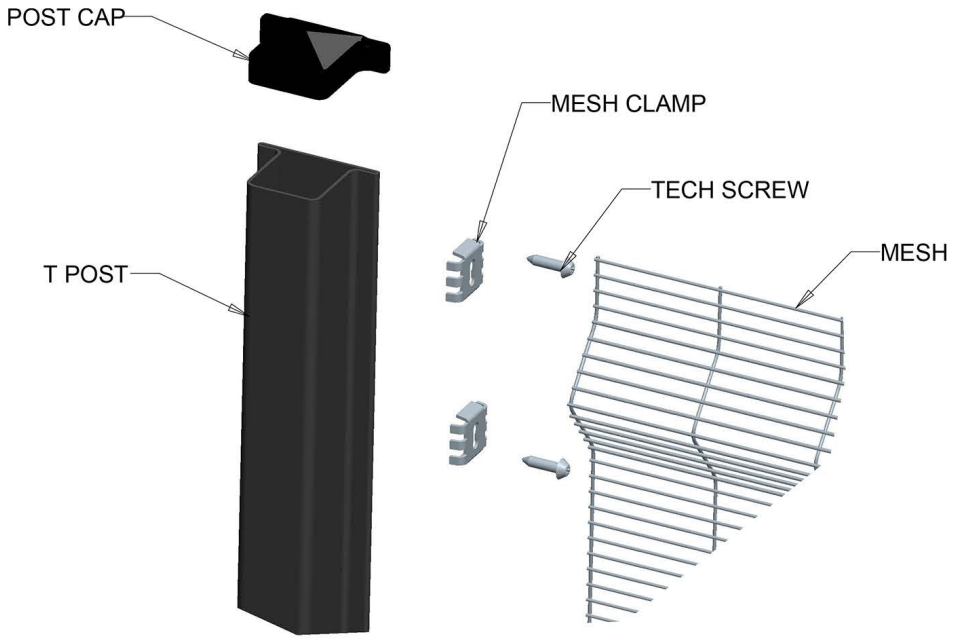

T POST
66.29
60
98.98
posts can be 1.8m (5 foot 10 inches) to 3.6m (11 feet 10 inches)


POST CAP
103.98
71
PLASTIC MOULDED CAP
36.23
22


MESH CLAMP
44.74
40.74
10.83
2.5

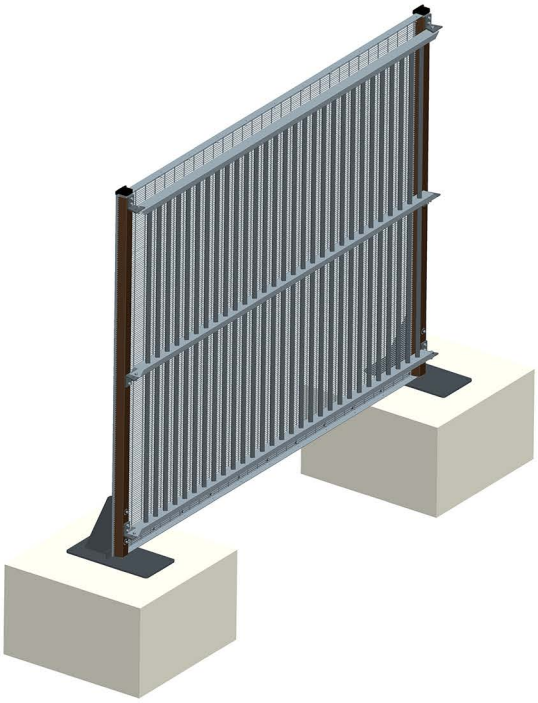


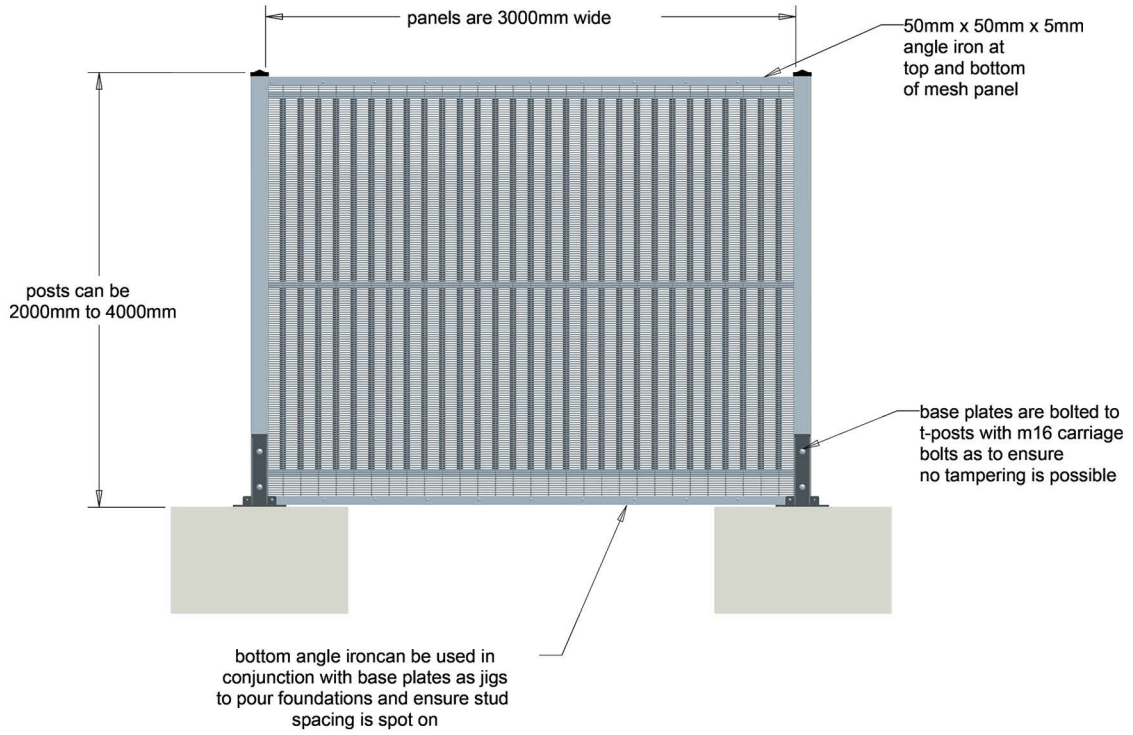
DETAIL B
SCALE 0.500

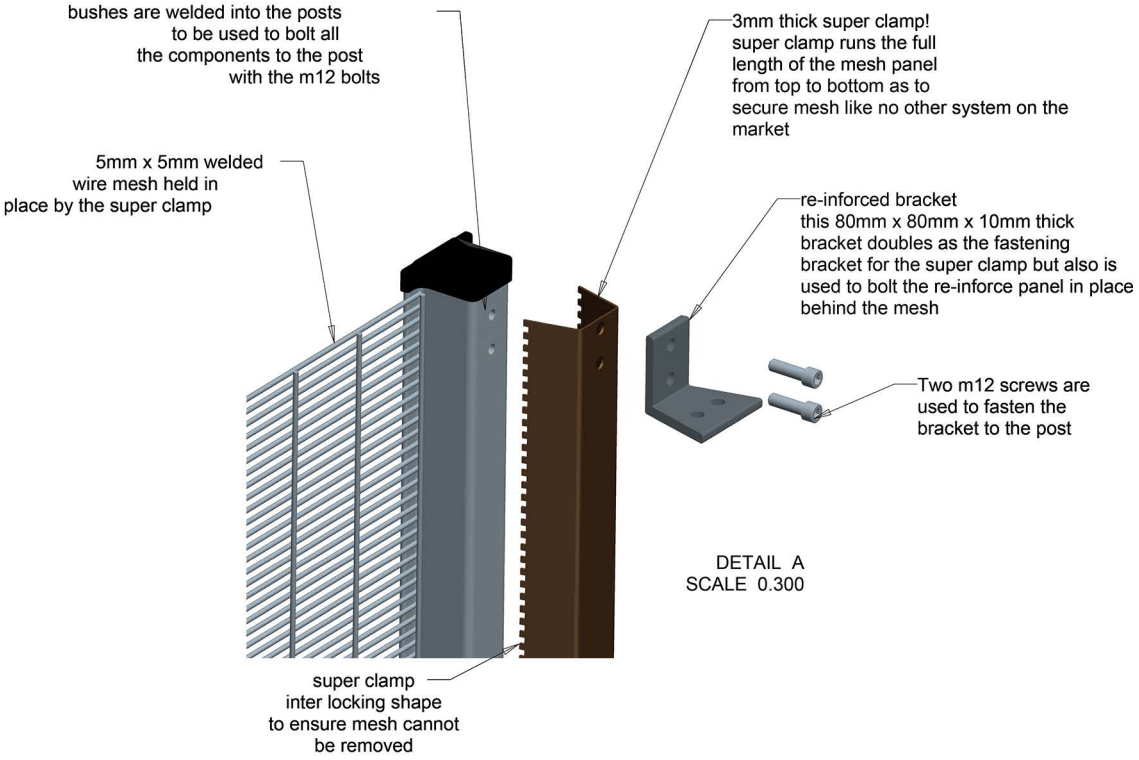


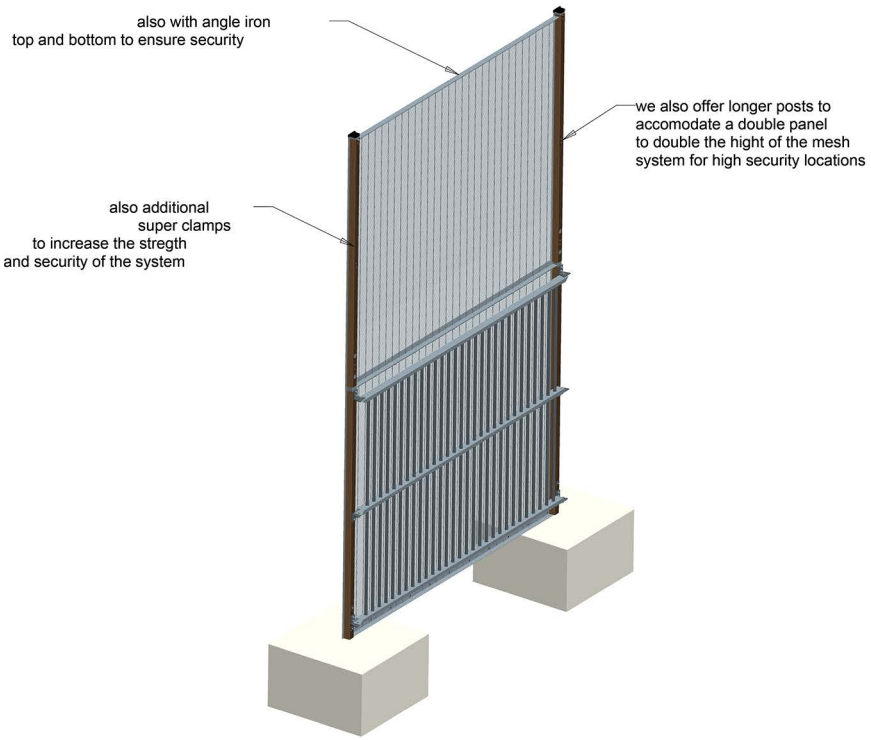
DETAIL C
SCALE 0.300

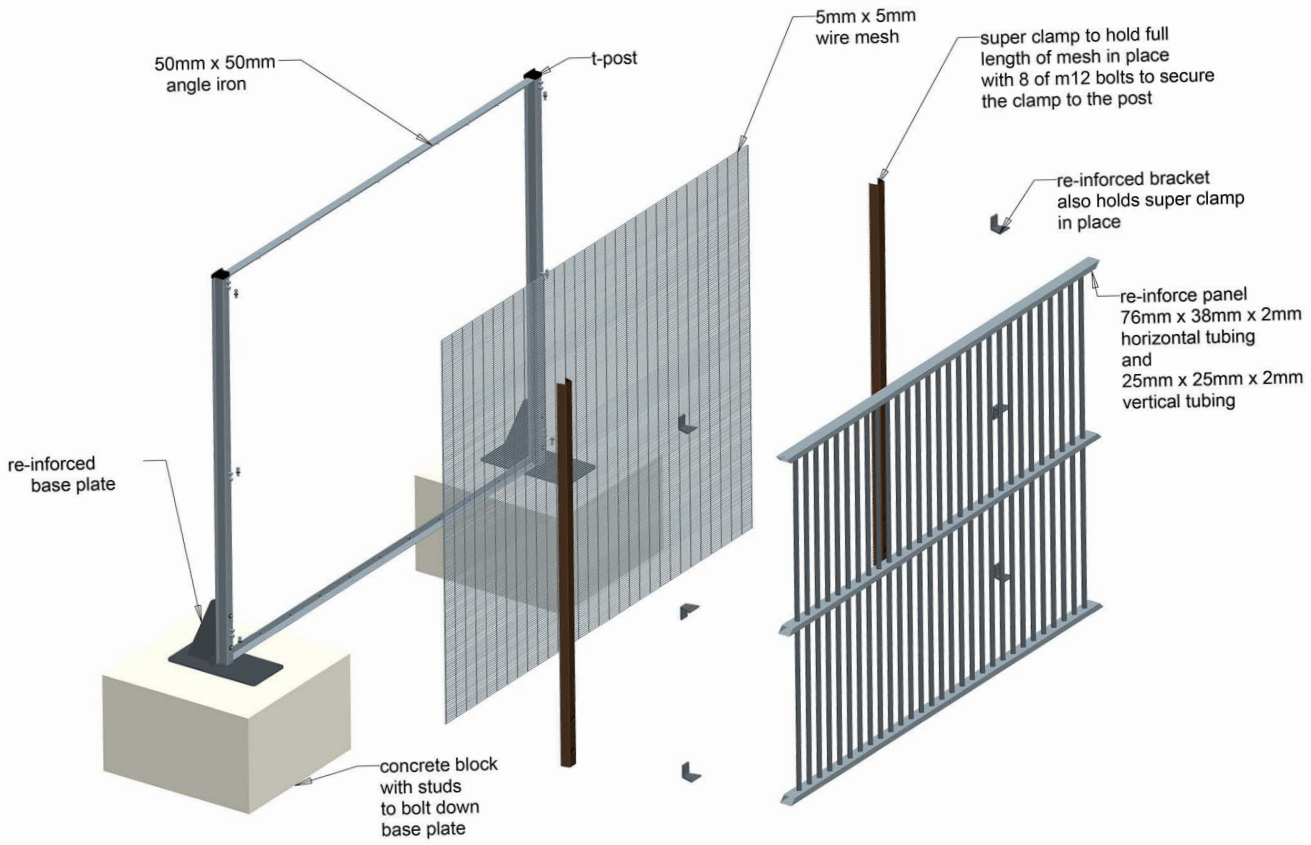
REINFORCED WELDED MESH | LEVEL 1



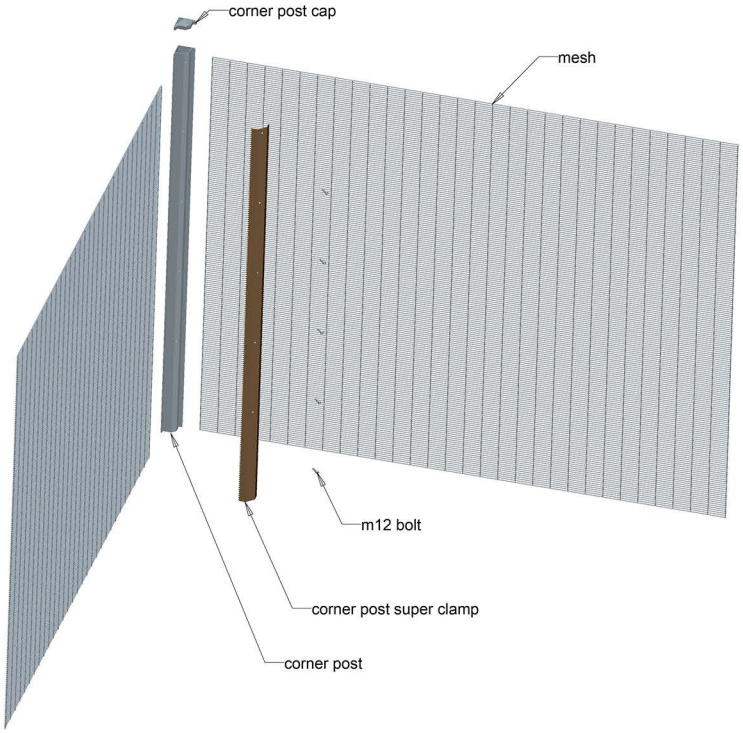



bushes are welded into the posts
to be used to bolt all
the components to the post
with the m12 bolts
3mm thick super clamp!
super clamp runs the full
length of the mesh panel
from top to bottom as to
secure mesh like no other system on the
market
5mm x 5mm welded
wire mesh held in
place by the super clamp
re-inforced bracket
this 80mm x 80mm x 10mm thick
bracket doubles as the fastening
bracket for the super clamp but also is
used to bolt the re-inforce panel in place
behind the mesh
Two m12 screws are
used to fasten the
bracket to the post
DETAIL A
SCALE 0.300
super clamp
inter locking shape
to ensure mesh cannot
be removed

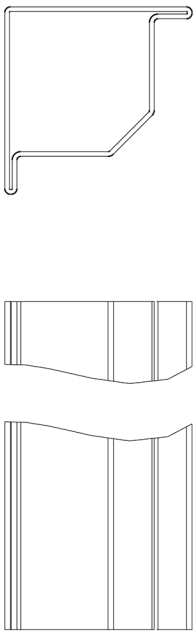

also with angle iron
top and bottom to ensure security
we also offer longer posts to
accomodate a double panel
to double the hight of the mesh
system for high security locations
also additional
super clamps
to increase the stregth
and security of the system


50mm x 50mm
angle iron
t-post
5mm x 5mm
wire mesh
super clamp to hold full
length of mesh in place
with 8 of m12 bolts to secure
the clamp to the post
re-inforced bracket
also holds super clamp
in place
re-inforce panel
76mm x 38mm x 2mm
horizontal tubing
and
25mm x 25mm x 2mm
vertical tubing
re-inforced
base plate
concrete block
with studs
to bolt down
base plate

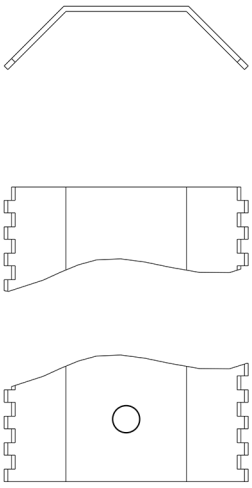
CORNER ASSEMBLY SEQUENCE



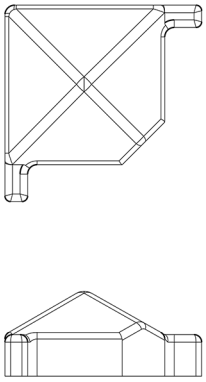
Corner Post



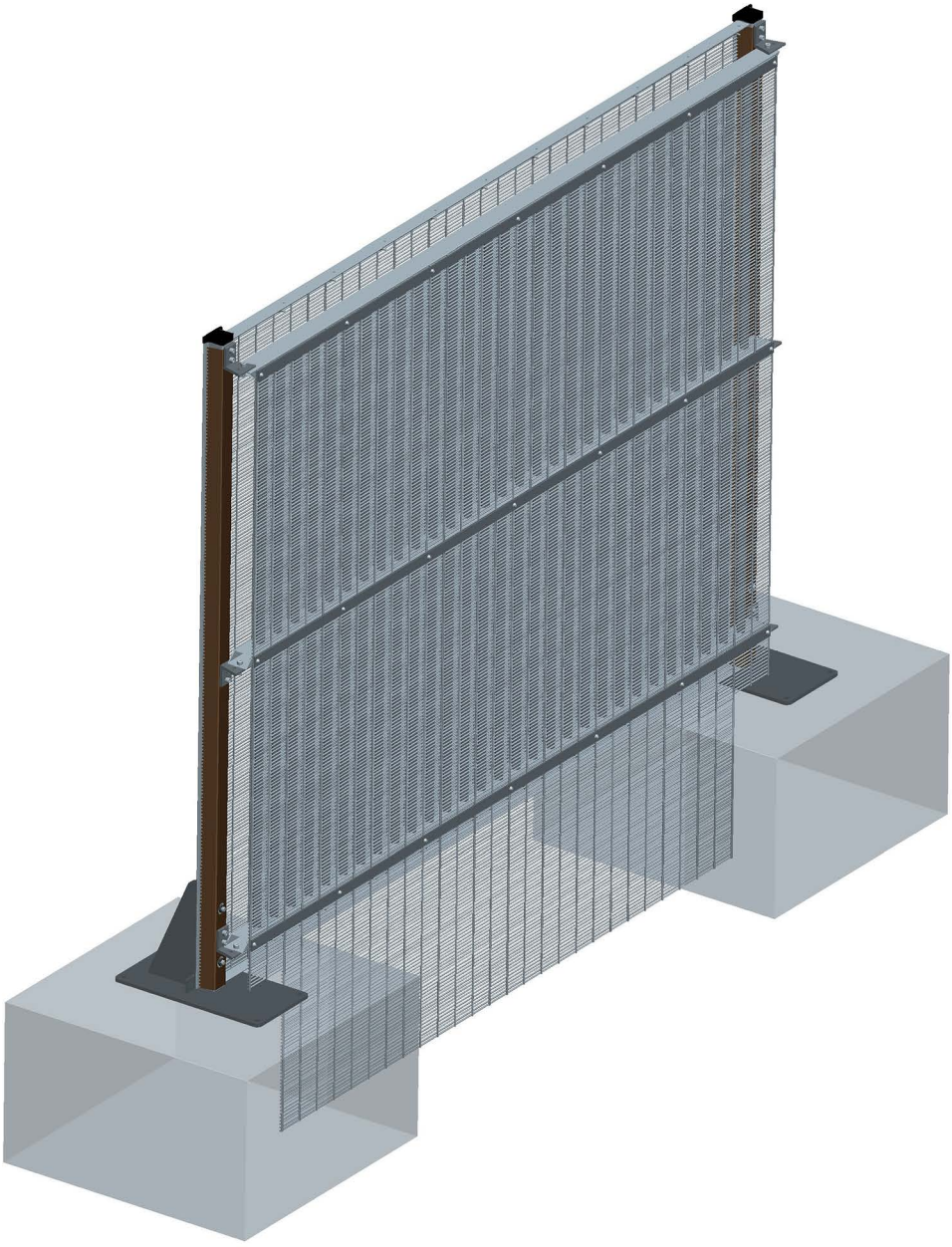
Corner Super Clamp

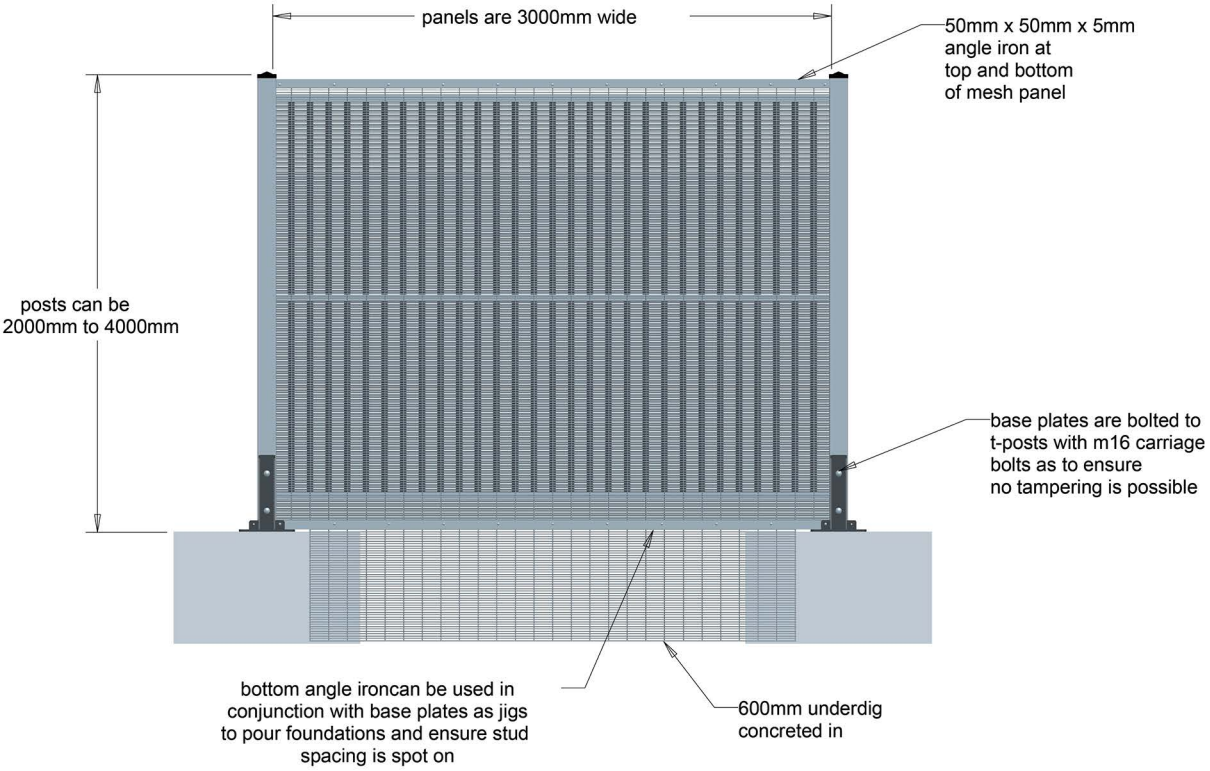


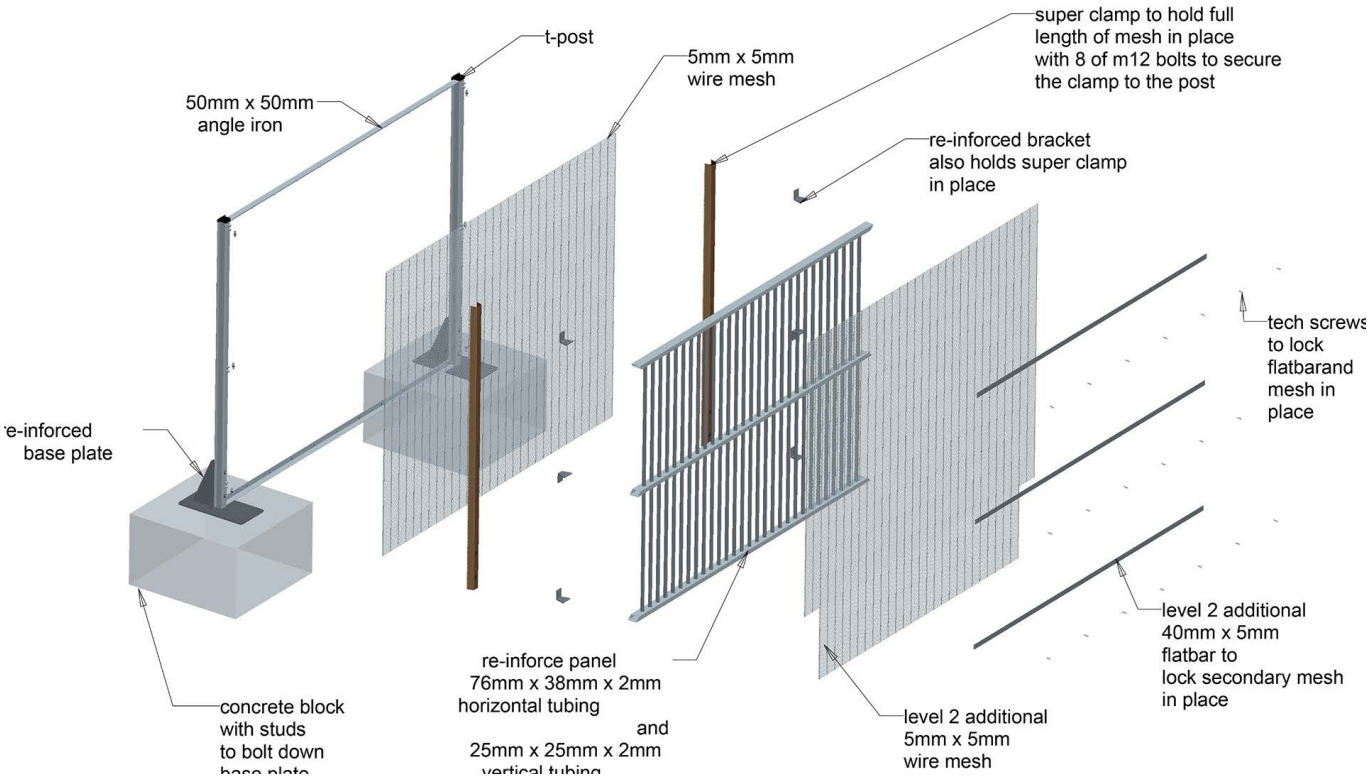
Corner post cap

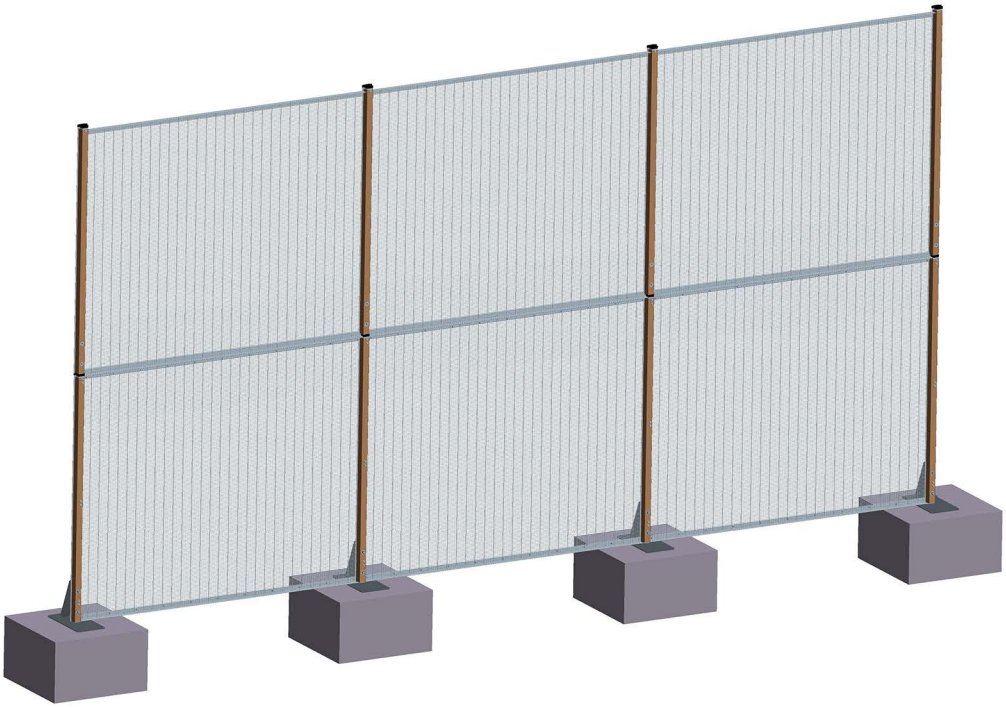


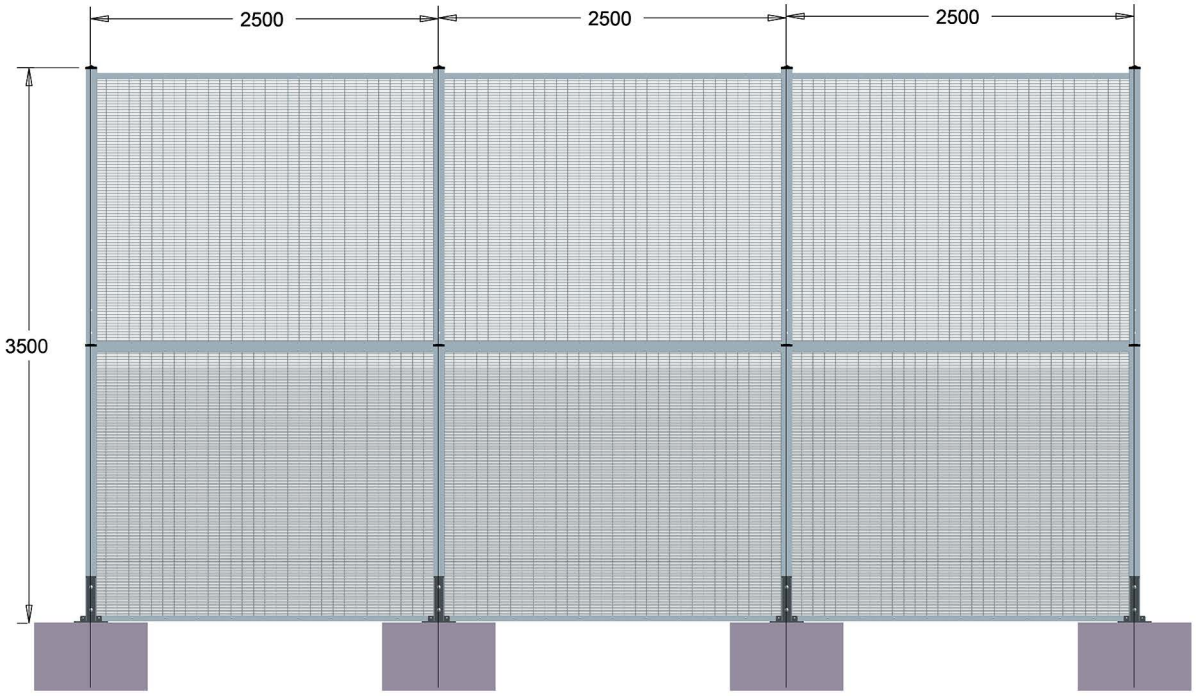
REINFORCED WELDED MESH | LEVEL 2

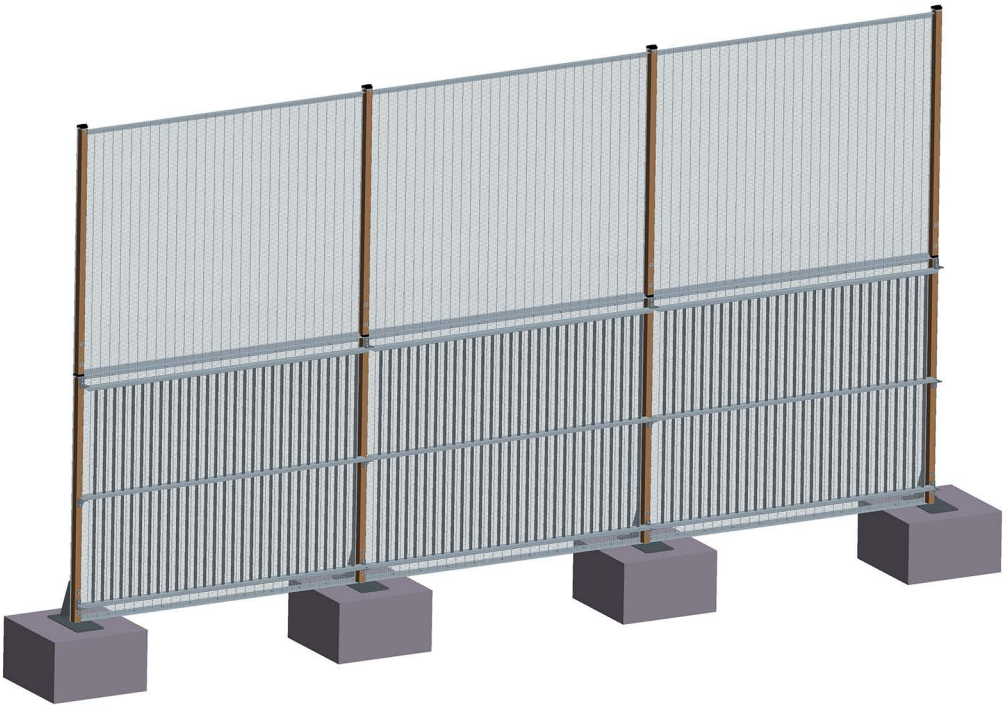


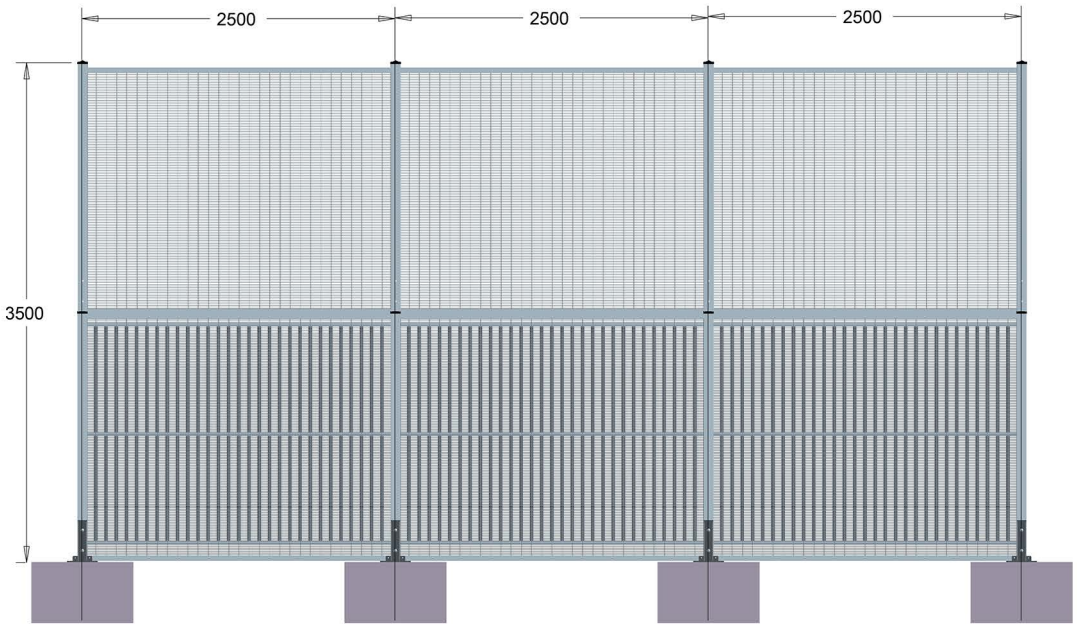

panels are 3000mm wide
50mm x 50mm x 5mm
angle iron at
top and bottom
of mesh panel
posts can be
2000mm to 4000mm
base plates are bolted to
t-posts with m16 carriage
bolts as to ensure
no tampering is possible
bottom angle ironcan be used in
conjunction with base plates as jigs
to pour foundations and ensure stud
spacing is spot on
600mm underdig
concreted in


t-post
50mm x 50mm
angle iron
5mm x 5mm
wire mesh
super clamp to hold full
length of mesh in place
with 8 of m12 bolts to secure
the clamp to the post
re-inforced bracket
also holds super clamp
in place
e-inforced
base plate
tech screws
to lock
flatbarand
mesh in
place
level 2 additional
40mm x 5mm
flatbar to
lock secondary mesh
in place
concrete block
with studs
to bolt down
re-inforce panel
76mm x 38mm x 2mm
horizontal tubing
and
25mm x 25mm x 2mm
level 2 additional
5mm x 5mm
wire mesh




2500
2500
2500
3500




2500
2500
2500
3500

COATING SPECIFICATION FOR POSTS

Plascoat PPA 571 is the best commercially available anti-corrosive protective coating for metal fences on the market today. It will significantly increase the maintenance-free lifetime of any fence, particularly if it is exposed to demanding environments.
Plascoat PPA 571 can be used to coat metal fence posts as well as wirework.

Plascoat PPA 571 will outlast all traditional powder coatings in terms of:

- Corrosion protection
- Cosmetic appearance
- Resistance to high UV, intense heat, salt and sand abrasion
- Impact damage
- Graffiti damage
- Sub-zero temperature performance



Low environmental impact

Plascoat PPA 571 is not harmful to the local environment:

- No plasticizers
- No VOCs
- No heavy metals
- Very low smoke on burning

Advantages over PVC coating

Spay or dip

- Will outlast PVC coatings in demanding environments (the salt spray corrosion rate and the abrasion rate of Plascoat PPA 571 is half that of standard thermoset powder coatings and the fading rate is 1/20th)
- Can be easily applied directly onto the metal, no primer required
- Completely environmentally friendly, no plasticizers, chlorine or halogens

Extrusion

- Faster line speeds
- Thinner, more controllable coating
- Adhesion without the use of a primer

Advantages over Polyester coatings

- No need for a primer coat
- Will outlast polyester coatings
- PPA 571 remains flexible in all climates and will withstand bending

PPA 571 coatings will continue to protect the metal from corrosion for a minimum period of:

- 35 years outside exposure in northern Europe
- 25 years outside exposure in southern Europe
- 15 years outside exposure in tropical regions

Plascoat PPA 571 coated fences are compliant to ASTM F668-07 and ASTM F1043-08 fencing standards.

Plascoat PPA 571 is a very popular coating in the Middle East and is ideally suited for use in hot, desert climates. It requires no cooled starage and can be applied in hot, humid conditions.

United Arab Emirates

Challenge: The climate in the United Arab Emirates is very demanding on coated metal Sacrificial zinc, polyester and PVC coatings can be quickly stripped off the metal by wind-blown sand. Very high UV levels can also cause coatings to degrade and fail after just a few years. Two of the key benefits of Plascoat® PPA 571 are that it is highly UV resistant and not abraded by wind-blown sand.



Plascoat PPA 571 fencing colour range covers all the popular colours requested by the fence customers. Larger orders can command customised colour services to match specific needs.

WHITE 110 / RAL 9016	**BLUE 536 / RAL 5017**	**GREY 695 / RAL 7046**
GREY 640 / RAL 7016	**GREEN 475 / RAL 6005**	**BLACK 700 / RAL 9005**

COATING SPECIFICATION FOR PANELS

Plascoat WireGuard has been specifically developed for the coating of outdoor wire metal structures such as welded or continuous mesh fences. It is ideal for businesses that can apply powder coating to wire mesh by the fluidized bed (dip) method and are looking for a superior, cost comparable powder coating to PVC to use instead.

In service benefits include:

- The coating will withstand flexing caused by wind and temperature changes down to -20 °C
- The fence can be unrolled easily in the cold, therefore extending the fence construction season
- Excellent salt-spray and UV resistance
- Superior low-temperature properties, the coating will not crack or become brittle

Low environmental impact

WireGuard is not harmful to the local environment:

- No plasticizers
- No VOCs
- Very low smoke on burning
- No heavy metals

Advantages over PVC coating

- Save 35% on metal quantities to achieve the same coating thickness
- Save time and money in the production process, Plascoat WireGuard requires no primer
- Save energy costs on lower oven temperatures
- No need for expensive ventilation equipment or air scrubbers. Ideal for factories located in urban areas



Louda
Industry

Nous fournissons des systèmes d'aéronefs sans pilote pour les opérations les plus exigeantes du monde entier. Expert, consultant expérimenté et conseils techniques, ventes, formation, soutien et au-delà.

MG ODG offre un seul point de contact pour tout et tout VTOL, ainsi qu'une sélection complète de solutions multiples, d'ailes et hybrides fixes, de charges utiles et de communication.



De civil à l'armée, commerciale à l'industrie, parlez à notre équipe pour une solution pour répondre à vos besoins exacts.





Fiabilité verticale Performances horizontales

«Décollage et atterrissage verticaux» - La capacité d'un avion sans pilote à décoller sans avoir besoin d'une piste ou d'un autre matériel encombrant et coûteux, rapidement et de manière fiable.

Avec des moteurs électriques sans balais pour le levage vertical et un moteur à combustion efficace pour le vol vers l'avant, nos aéronefs offrent des avantages significatifs par rapport aux conceptions conventionnelles.





Solutions spécifiques

Nous travaillons en étroite collaboration avec nos clients pour construire et fournir exactement ce dont ils ont besoin pour leurs opérations.





Conseil technique

Notre équipe de vente expérimentée et technique est là pour vous aider et vous conseiller.





Formation & assistance

Notre équipe de formation et d'assistance et nos pilotes ont des milliers d'heures de vol enregistrées et veilleront à ce que vous restiez en l'air.





Louda
Industry

Cel: +226 25 37 67 44
Mail: procurement@loudaindustry.com

UNE COMPÉTENCE RECONNUE DANS LA GESTION DE L'URGENCE

A recognized competence in urgency management