ADVANCED ENGINEERING

WEDGEWIRE

PRODUCT CATALOGUE · ADEN WEDGE WIRE

Product Catalogue

Wedge wire screen and complementary product types — engineered for water treatment, mining, food & beverage, oil & gas, and architectural applications.

CONTENTS

The product range, followed by an engineering reference.

The product range opens the catalogue — two products per page, each with a manufacturing photo, engineering summary, and specifications. Materials, wire profile, and support rod selection are customizable on every product and confirmed at the enquiry stage. The engineering reference at the back covers construction principles, wire and support rod profiles, the quality and documentation protocol, and material selection drivers that apply across every product in the range.

PRODUCT RANGE

ENGINEERING REFERENCE

PRODUCT 01

Cylindrical Wedge Wire Screen

The most widely used wedge wire screen type. Continuous V-wire slot design provides maximum open area and non-clogging performance along the full length. Available in modular static configurations for water treatment, mining, food processing, and petrochemical filtration.

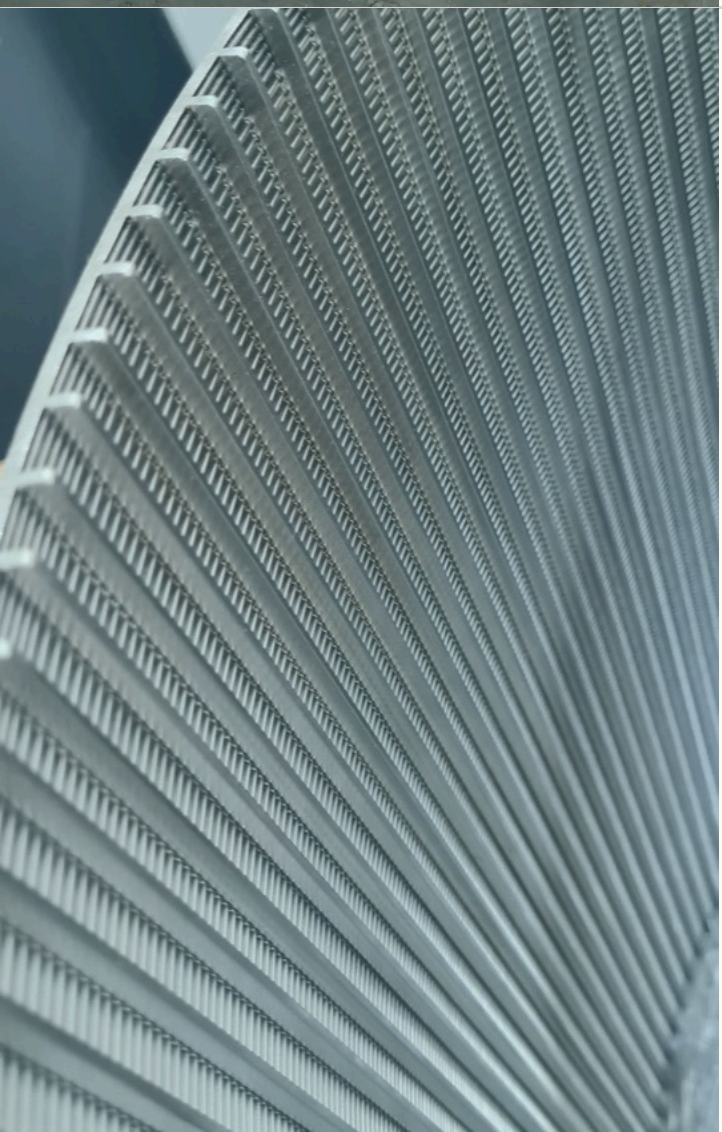
APPLICATIONS

- Water treatment & intake
- Mining & mineral processing
- Food & beverage filtration
- Petrochemical screening

SPECIFICATIONS

DIAMETER RANGE	25 mm to 1200 mm
LENGTH	Up to 6000 mm
SLOT APERTURE	0.02 mm to 10 mm
WIRE PROFILE	V-wire (triangular)
OPEN AREA	Up to 60%
END CONNECTIONS	Flanged, threaded, plain

+ Materials, wire profile, and support rod selection are customizable upon request.



PRODUCT 02

Sieve Bend Screen

Curved static screen that separates solids from liquids using gravity flow across a stainless steel wedge wire surface. No moving parts, no energy input. High-capacity design outperforms flat panel alternatives in dewatering, sizing, and classification. Also known as DSM screen or bend screen.

APPLICATIONS

- Dewatering & sizing
- Coal & mineral separation
- Food & starch processing
- Solid–liquid separation

SPECIFICATIONS

WIDTH	Up to 2000 mm
ARC LENGTH	Up to 1800 mm
SLOT APERTURE	0.05 mm to 3 mm
RADIUS	Custom to application
WIRE PROFILE	V-wire (triangular)
CAPACITY	Up to 100 m³/h per metre width

+ Materials, wire profile, and support rod selection are customizable upon request.

PRODUCT 03

Rotary / Drum Screen

Rotating cylindrical screen that provides continuous filtration through slow rotation. Solids are separated without interrupting process flow. Wedge wire construction maintains consistent slot integrity under operational stress, making it suitable for high-volume wastewater and intake screening.

APPLICATIONS

- Wastewater pre-treatment
- Water intake cleaning
- Food processing filtration
- Mineral processing

SPECIFICATIONS

DIAMETER	300 mm to 2500 mm
LENGTH	Up to 4000 mm
SLOT APERTURE	0.10 mm to 6 mm
ROTATION SPEED	1 to 10 RPM
WIRE PROFILE	V-wire (triangular)

+ Materials, wire profile, and support rod selection are customizable upon request.

PRODUCT 04

Flat / Panel Screen

Rectangular wedge wire panels designed for vibrating screen decks, static drain applications, and architectural installations. High open area and precise slot sizing. Support bar spacing is calculated for structural integrity under vibration loads.

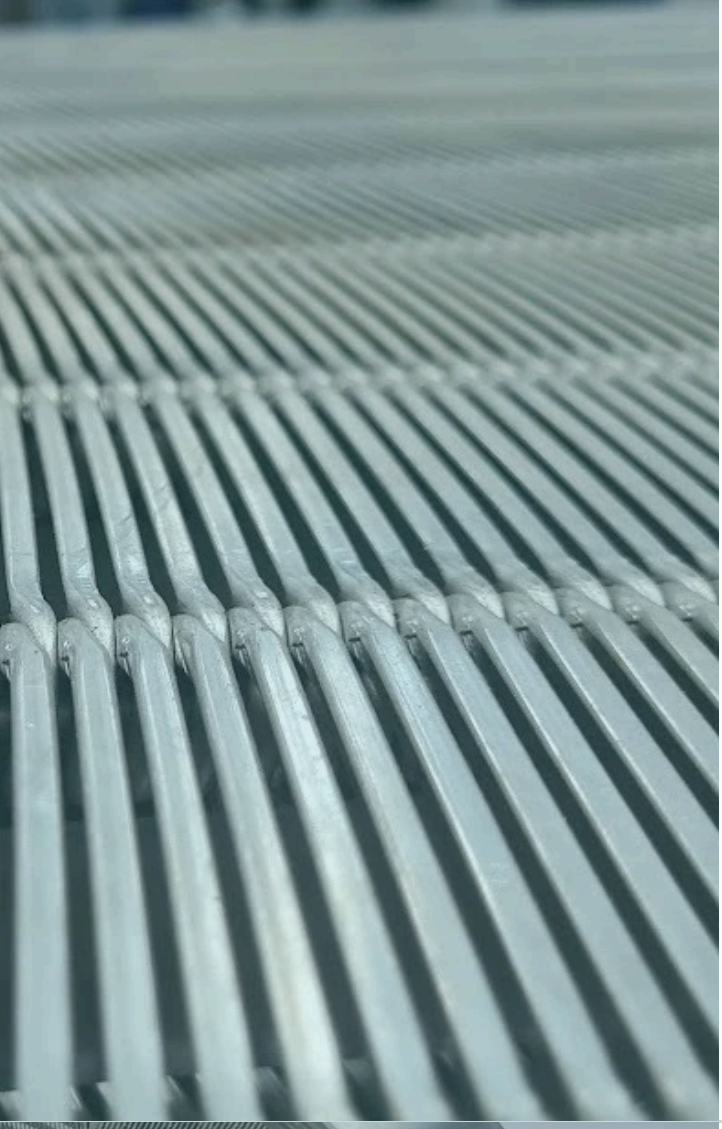
APPLICATIONS

- Vibrating screen decks
- Sizing & grading
- Dewatering applications
- Fermentation systems

SPECIFICATIONS

PANEL SIZE	Up to 1500 × 3000 mm
SLOT APERTURE	0.05 mm to 25 mm
WIRE PROFILE	V-wire, flat top
SUPPORT BAR	Custom spacing
OPEN AREA	Up to 65%

+ Materials, wire profile, and support rod selection are customizable upon request.



PRODUCT 05

Looped Wire Screen

Heavy-duty construction where V-wire is looped and welded around support rods for maximum resistance to impact and abrasion. The preferred screen type in mining and mineral processing where panels face extreme mechanical stress and heavy particle loads.

APPLICATIONS

- Coal & gold mining
- Mineral processing
- Petrochemical filtration
- Industrial dewatering

SPECIFICATIONS

PANEL SIZE	Custom to frame
SLOT APERTURE	0.5 mm to 50 mm
WIRE PROFILE	Looped V-wire
LOAD RATING	Heavy duty

+ Materials, wire profile, and support rod selection are customizable upon request.

PRODUCT 06

Basket / Centrifuge Screen

Centrifuge baskets in conical, cylindrical, and tapered configurations. Machined to tight tolerances for vibration-free operation at high rotational speeds. V-profiled wire construction provides accurate filtration in centrifugal separation for chemical, food, and mining applications.

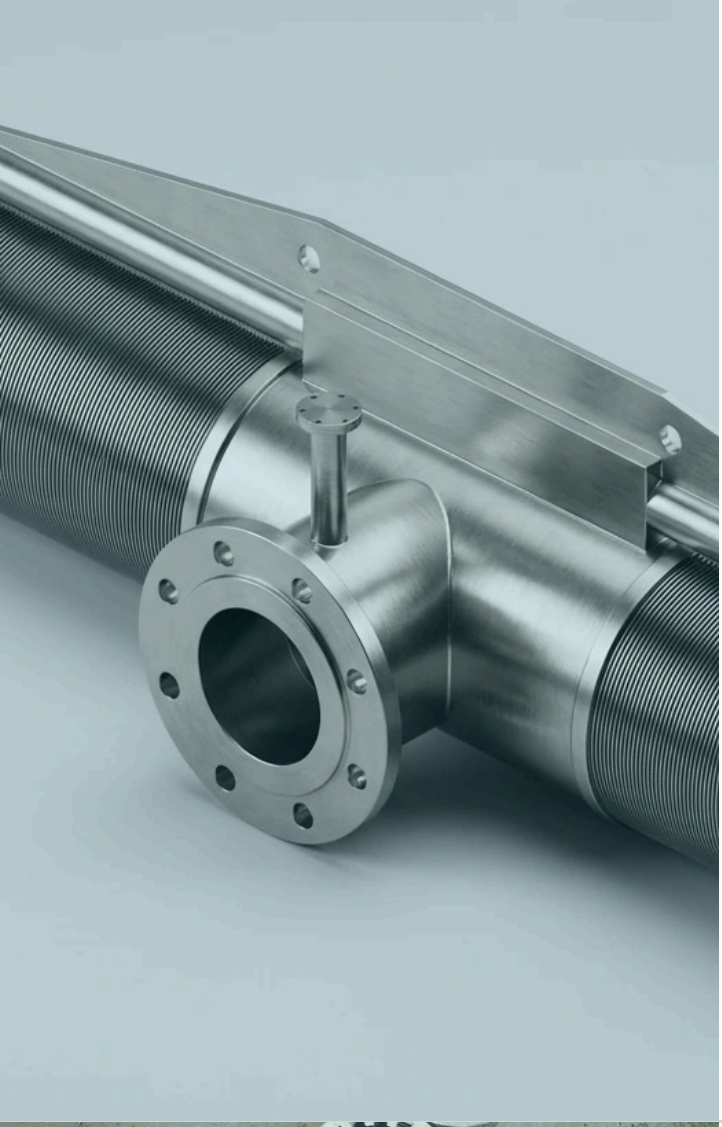
APPLICATIONS

- Centrifugal separation
- Chemical processing
- Food processing
- Vibratory centrifuge dewatering

SPECIFICATIONS

DIAMETER	200 mm to 1400 mm
HEIGHT	Up to 1200 mm
SLOT APERTURE	0.02 mm to 2 mm
CONFIGURATION	Conical, cylindrical, tapered
BALANCE	Dynamic balanced

+ Materials, wire profile, and support rod selection are customizable upon request.



PRODUCT 07

Intake Screen (T-Screen)

Submerged T-screen intake systems for raw water intake from rivers, lakes, and coastal environments. Low through-slot velocity design protects aquatic life while maintaining consistent flow. Compliant with US Clean Water Act Section 316(b) and EU Water Framework Directive.

APPLICATIONS

- Municipal water supply
- Industrial cooling intake
- Desalination intake
- Fish-friendly intake

SPECIFICATIONS

DIAMETER	150 mm to 3000 mm
SLOT APERTURE	0.5 mm to 10 mm
THROUGH-SLOT VELOCITY	< 0.15 m/s
COMPLIANCE	Section 316(b), EU WFD
CLEANING	Air backwash, mechanical

+ Materials, wire profile, and support rod selection are customizable upon request.

PRODUCT 08

Water Well Screen (Vee Wire)

Continuous V-wire slot design that prevents sand and formation material from entering the well while maximising water flow. Engineered for groundwater extraction, dewatering wells, and monitoring wells. Available with threaded, flanged, or plain end connections.

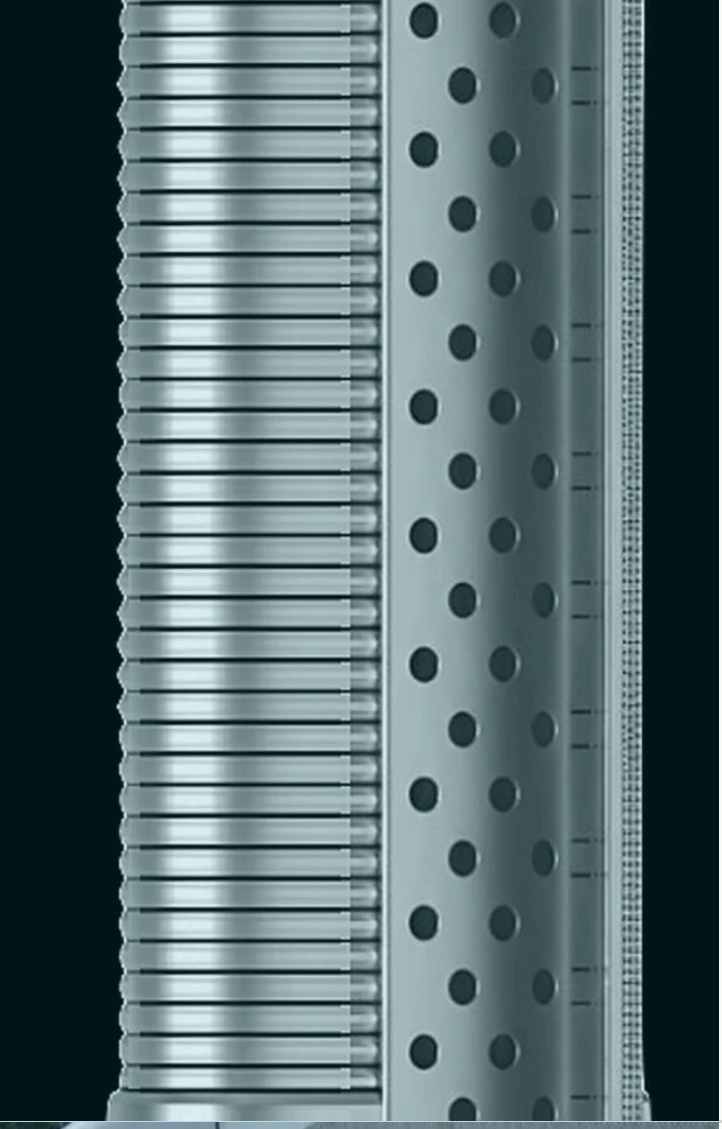
APPLICATIONS

- Groundwater extraction
- Dewatering wells
- Monitoring wells
- Industrial borehole filtration

SPECIFICATIONS

DIAMETER	50 mm to 600 mm
LENGTH	Up to 6000 mm
SLOT APERTURE	0.1 mm to 5 mm
END CONNECTION	Threaded, flanged, plain
COLLAPSE STRENGTH	Engineered to depth

+ Materials, wire profile, and support rod selection are customizable upon request.



PRODUCT 09

Sand Control Well Screen

Wire-wrapped sand control screens engineered for vertical and horizontal hydrocarbon production wells, water injection wells, and steam injection (SAGD) applications. V-wire continuous slot construction welded onto longitudinal support rods or directly onto perforated API base pipe. Manufactured on fully automated PLC-controlled resistance welding systems to deliver consistent slot tolerance and weld penetration on every joint. Available as direct-wrapped, pipe-based (perforated base pipe), or pre-packed gravel screens to match formation grain size and completion design. Engineered collapse strength matched to well depth and formation pressure. API tubing thread connections (Buttress, NUE, EUE, Premium), flanged, or plain end terminations.

APPLICATIONS

- Vertical oil & gas production wells
- Horizontal completions
- Water injection wells
- Steam injection (SAGD)

SPECIFICATIONS

DIAMETER RANGE	2-7/8" to 13-3/8" (73–340 mm), custom
LENGTH	Up to API Range III (~12 m)
SLOT APERTURE	From 0.05 mm (0.002"), custom
WIRE PROFILE	V-wire continuous slot
CONSTRUCTION	Direct-wrap, pipe-based, or pre-packed gravel
COLLAPSE STRENGTH	Engineered to well depth
END CONNECTIONS	API thread (BTC, NUE, EUE, Premium), flanged, plain

PRODUCT 10

Coanda Screen

Curved wedge wire panel that exploits the Coanda effect for passive water intake. Water flows over the curved surface and adheres to the wire, passing through the slots by gravity and surface tension. Debris is rejected over the screen face. No moving parts, no power consumption, no operator intervention. Ideal for hydropower, remote water supply, irrigation, and aquaculture.

APPLICATIONS

- Hydropower intake
- Irrigation canal intake
- Remote water supply
- Aquaculture water supply

SPECIFICATIONS

WIDTH	Up to 3000 mm
HEIGHT	500 mm to 1500 mm
SLOT APERTURE	1 mm to 3 mm
MIN. HEAD	150 mm to 300 mm
CLEANING	Self-cleaning (Coanda effect)

+ Materials, wire profile, and support rod selection are customizable upon request.

PRODUCT 11

Architectural Screen

Wedge wire panels used as building facade cladding, sun screens, balustrades, ceiling panels, and interior partitions. The V-wire profile creates consistent light filtration and natural ventilation while maintaining structural rigidity. Slot width controls transparency and solar shading. Panels are manufactured to architectural dimensions and finished to specification.

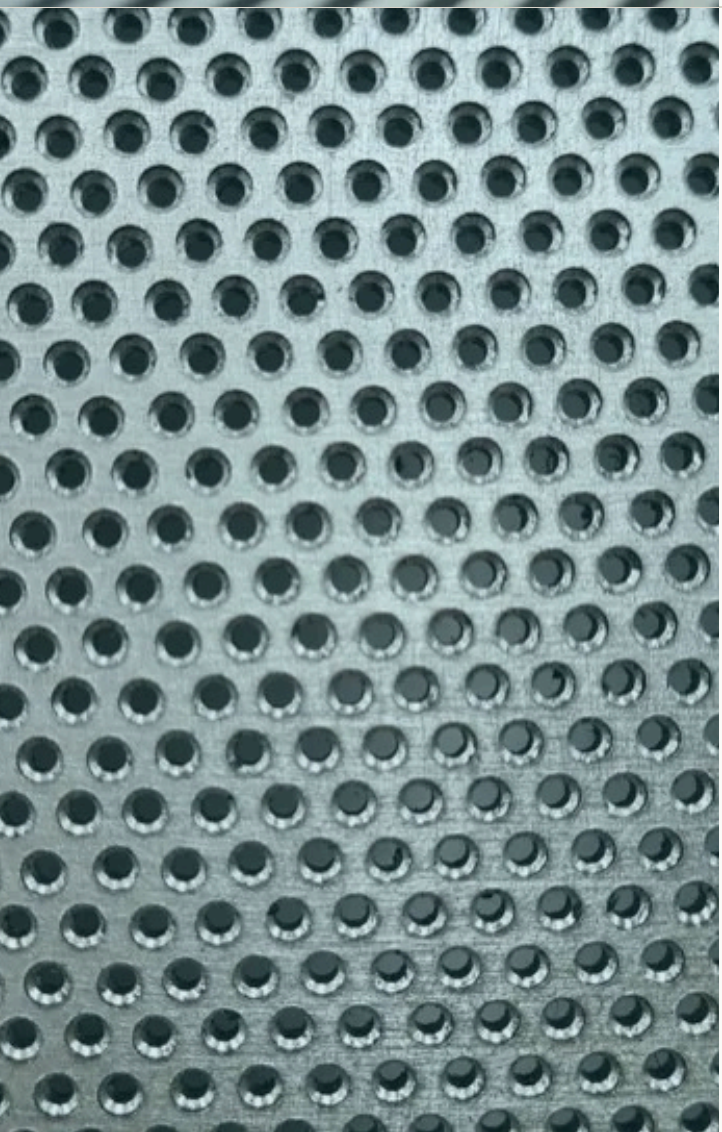
APPLICATIONS

- Building facades
- Solar shading
- Ceiling and wall cladding
- Interior partitions
- Balustrades and stair components
- Trench, floor, and entrance grates

SPECIFICATIONS

PANEL SIZE	Custom to project
SLOT APERTURE	1 mm to 20 mm
WIRE PROFILE	V-wire, flat top
SURFACE FINISH	Brushed, polished, or coated

+ Materials, wire profile, and support rod selection are customizable upon request.



PRODUCT 12

Drilled Screen

A complementary product line to ADEN wedge wire screens, engineered for applications where round-hole geometry is preferred over V-wire slots. Precision-drilled perforated plates and cylinders manufactured on purpose-built drilling machines. Available in cylindrical (single-diameter), bi-cylindrical (step-drilled / counterbore), countersunk, conical, and cylindrical-conical hole profiles.

APPLICATIONS

- Sugar centrifugation
- Paper machine drainage
- Chemical filtration
- Specialty press applications
- Shredding and recycling plants
- Dryer screens

SPECIFICATIONS

DIAMETER	200 mm to 1400 mm
HOLE GEOMETRIES	Cylindrical, bi-cylindrical, countersunk, conical
OPEN AREA	Application-specific
SURFACE FINISH	Polished to specification

+ Materials, wire profile, and support rod selection are customizable upon request.

PRODUCT 13

Custom Assemblies & Fabricated Components

When standard screen types do not fit the application, ADEN engineers and manufactures custom assemblies. This includes header–lateral systems for ion exchange and activated carbon vessels, multi-screen manifold assemblies, flanged and hubbed collector systems, combined wedge wire and perforated plate units, and retrofit screens manufactured to match existing equipment dimensions. Every assembly is built to customer drawings or co-engineered from application requirements.

APPLICATIONS

- Header–lateral systems
- Ion exchange vessels
- Retrofit screen replacements
- Multi-screen manifold assemblies

SPECIFICATIONS

CONFIGURATION	Per drawing or specification
COMPONENTS	Headers, laterals, manifolds, frames
MATERIALS	Full range available
DOCUMENTATION	MTR, CoC, dimensional report

+ Materials, wire profile, and support rod selection are customizable upon request.

CONSTRUCTION

Two components, welded into a filtration lattice.

Every wedge wire screen in this catalogue is built from two distinct profiles. V-shaped wire (AW and AWD series) forms the filtration face. Support rods (AS and AST series) run perpendicular to the wire, carrying the structural load and fixing slot position. Resistance welding fuses the two at every intersection.

Non-clogging slot geometry

The slot widens toward the back of the wire. Particles that just fit the slot pass through without jamming; larger particles roll off the face. Backwash or CIP cleans the screen because debris cannot wedge tighter as it moves through.

High open area

With wire widths from 1.00 mm, open area reaches **65 %**, against 25–40 % for perforated plate. The open area translates directly into flow capacity at a given pressure drop, lowering pump duty or reducing screen face area.

Structural rigidity

The V-profile's depth stiffens the screen face against pressure differentials and mechanical loads without a heavier support frame. Looped-wire construction multiplies this for heavy-duty mining service.

Repeatable slot accuracy

Resistance welding sets wire pitch at a tolerance typically within **±5 %** of the nominal slot value. Measurement is verified with feeler gauges at multiple points on the finished screen — see the inspection protocol on page 6.

Open area calculation

$$\text{Open area} = \text{slot} / (\text{slot} + W)$$

slot
Aperture between adjacent wires, measured at the narrowest point (mm).

W
Wire-top width — the top face of the V-profile (mm). Values given in the AW series tables on the next page.

Worked example

A 0.5 mm slot with **AW 28** (W = 2.20 mm):

OA = 0.5 / (0.5 + 2.20) = **18.5 %**

Support rod spacing and width reduce effective open area at each wire–rod intersection; effective open area is typically 3–8 % below the gross figure depending on support pitch. The design tools on our website (Open Area Calculator, Cylinder Design Tool, Flow Rate Calculator) compute the net value including support corrections.

V-wire profiles — single-angle and dual-angle geometries.

AW Series · Single-Angle Wedge Wire

One inclined face · α 20°–33.8°

PROFILE	W (MM)	H (MM)	A
AW 12	1.00	2.50	20°
AW 18	1.60	3.00	23°
AW 28	2.20	4.50	23°
AW 34	2.80	5.00	23°
AW 42	3.40	6.50	23°
AW 50	5.00	7.50	33.8°

When to specify. The default wedge wire geometry. AW 12–42 use a 20–23° angle for structural rigidity across a broad slot range — water treatment, food processing, chemical filtration. AW 50 widens the angle to 33.8° for higher open area where fine particle blinding is the primary risk, common in water intake and Coanda hydropower screens.

AWD Series · Dual-Angle Wedge Wire

Compound angle · $\alpha_1 + \alpha_2$

PROFILE	W (MM)	H (MM)	A
AWD 32	2.50	5.00	32.7°
AWD 42	3.40	6.50	33.8°

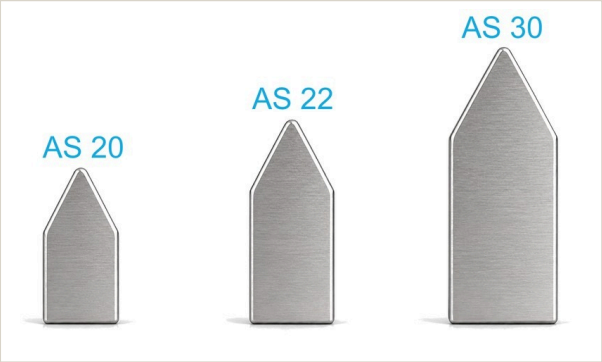
When to specify. Compound-angle profile combining a narrow upper section (less blinding) with a wider lower section (more structural). Specified where fine particles might otherwise lodge in a single-angle slot, or where higher open area is required without sacrificing wire stiffness.

Support rods — pencil or triangle contact geometry.

The support rod geometry controls the contact footprint at each wire-to-rod weld. AS pencil rods minimise the footprint and maximise effective open area; AST triangle rods broaden it for higher weld strength.

AS Series · Pencil Wedge Wire

Pointed contact surface

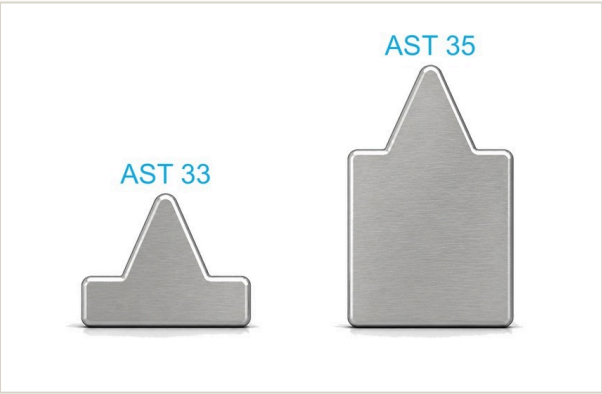


PROFILE	W (MM)	H (MM)	WT (MM)
AS 20	2.00	4.50	1.80
AS 22	2.00	5.80	1.80
AS 30	3.00	7.50	2.53

When to specify. Minimises the contact area between wire and support, keeping effective open area close to the gross figure. Standard for cylindrical and flat screens where throughput per unit area is the driving constraint.

AST Series · Triangle Wedge Wire

Wide contact surface



PROFILE	W (MM)	H (MM)	WB (MM)	HB (MM)
AST 33	4.00	3.00	2.13	1.00
AST 35	4.00	6.35	2.40	4.30

When to specify. Broader contact area delivers stronger weld joints for heavy-load screens. Specified for looped-wire mining screens, vibrating decks, and any application where mechanical stress at the intersection dominates the design.

QUALITY CONTROL

Eleven checkpoints from raw wire to shipment.

Every screen passes through this inspection sequence before leaving the manufacturing floor. Measurement methods, equipment, and timing are fixed per our ISO 9001:2015-certified quality management system.

#	PARAMETER	METHOD	WHEN
01	**Material composition**	XRF spectroscopy; mill certificates	Before production
02	**Wire cross-section**	Dimensional measurement against profile specification	Before welding
03	**Weld penetration**	Visual and destructive sample testing	During production
04	**Slot aperture**	Precision feeler gauges at multiple points	During & after
05	**Overall dimensions**	Length, diameter, and width measurement	Final inspection
06	**Roundness**	Deviation measurement on cylindrical screens	Final inspection
07	**Flatness**	Surface deviation on flat panels	Final inspection
08	**Surface condition**	Visual inspection for defects and finish quality	Final inspection
09	**Wire spacing accuracy**	Precision measurement at multiple points	After production
10	**Open area percentage**	Calculation verified by flow testing	Design verification
11	**Material composition (final)**	XRF spectroscopy, mill certificates, customer report	Before shipment

DOCUMENTATION

What ships with every screen.

Three documents accompany every delivery. Application-specific formats (CE, ASME, FDA, 3-A, NACE, client-specific) are prepared on request at the start of production.

Certificate of Conformity

COC

Issued for every screen manufactured. One page per batch. Confirms that the delivered screen matches the approved drawing and meets the specification agreed at order.

- Material grade and heat number
- Key dimensions (length, diameter or panel size)
- Slot aperture specification
- Compliance statement against the approved drawing
- Production reference, date, and inspector signature

Material Test Report

MTR / EN 10204 3.1

Chemical composition and mechanical properties traceable to the material supplier's heat. Cross-referenced with our incoming XRF verification at goods-in.

- Chemical composition (Cr, Ni, Mo, C, Mn, Si, P, S, N, others)
- Mechanical properties (yield, tensile, elongation, hardness)
- Supplier heat number, melt date, EN 10204 classification
- Incoming XRF verification against mill certificate

Dimensional Report

DR — ON REQUEST

Measured dimensional values for the critical parameters on the approved drawing, with the applicable tolerance band. Supplied for tight-tolerance or regulated applications on request at order.

- Slot aperture readings at multiple points
- Diameter, length, or panel dimensions vs. tolerance
- Roundness or flatness deviation as applicable
- Derived open area percentage

Project-specific documentation. For regulated industries (pharmaceutical, food contact, potable water, oil & gas sour service) we produce additional documentation packs: EN 10204 3.2 third-party witnessed certificates, 3-A or EHEDG compliance statements, FDA 21 CFR 177.2600 material declarations, NACE MR0175 sour service certification. Request the list at the enquiry stage.

MATERIAL SELECTION

Selecting a material means matching four operating realities.

Wedge wire screens run in water treatment plants, mineral processing lines, food-grade vessels, chemical reactors, and architectural facades. Each environment loads the screen material differently. Every grade in the comparison matrix is scored against four axes — use them to narrow the choice before reading the per-product material lists in this catalogue.

Chloride exposure

Chloride ions break through the passive oxide film on stainless steel and start pit corrosion or stress corrosion cracking. The **Pitting Resistance Equivalent Number** (PREN = %Cr + 3.3·%Mo + 16·%N) predicts how well a grade resists chloride attack. PREN 18 tolerates around 200 ppm Cl^- at ambient; PREN 24 handles 1000 ppm; duplex and super duplex clear 3 600 to 50 000 ppm.

Operating temperature

High temperatures trigger three failure modes: carbide precipitation at weld zones (sensitization), reduced chloride resistance, and creep. Above 400 °C the titanium-stabilised grades (**SS 316Ti, SS 321**) prevent sensitization. Duplex alloys are capped at 300 °C — the 475 °C embrittlement region degrades the ferrite phase beyond that.

Abrasive load

Solids moving across the screen face wear the wedge wire. Austenitic stainless rates 1 on our four-point abrasion scale. Duplex rates 2. For heavy abrasion — mining fines, aggregate — **S700** or **Hardox 450/500** delivers three to four times the service life, accepting the trade-off of zero corrosion resistance.

Cost & fabrication

Cost is expressed as an index relative to SS 304 (1.00). SS 316L sits at **1.30**. Super Duplex 2507 is near 2×. Structural steels run 0.35–0.55, Hardox around 0.70. Fabrication complexity layers on top: duplex and super duplex require qualified welding procedures, which tend to drive lead time more than the raw material premium does.

AT A GLANCE

All eleven grades on one page.

Properties collected from the materials database. Chloride limits are for ambient-temperature service; halve them for hot chloride exposure. Cost index uses SS 304 = 1.00 as the baseline.

GRADE	DESIGNATION	MAX TEMP	PREN	Cl^- LIMIT	COST IDX	WELD	BEST FOR
AUSTENITIC STAINLESS STEELS							
SS 304	1.4301 · S30400	800 °C	18.0	200 ppm	1.00	Good	General freshwater filtration, controlled environments
SS 304L	1.4307 · S30403	800 °C	18.0	200 ppm	1.00	Excellent	Welded wedge wire assemblies, standard duty
SS 316	1.4401 · S31600	800 °C	24.2	1 000 ppm	1.30	Good	Chlorinated water, mild acid, marine atmosphere
SS 316L	1.4404 · S31603	800 °C	24.2	1 000 ppm	1.30	Excellent	Industry standard · FDA, 3-A, EHEDG compliant
SS 316Ti	1.4571 · S31635	900 °C	24.2	1 000 ppm	1.35	Good	Hot chloride service, petrochemical streams
SS 321	1.4541 · S32100	900 °C	18.0	200 ppm	1.10	Good	Hot non-chloride (exhaust, kiln, furnace)
DUPLEX AND SUPER DUPLEX							
Duplex 2205	1.4462 · S32205	300 °C	35.0	3 600 ppm	1.22	Moderate	Brackish water, offshore, chloride > 1 000 ppm
Super Duplex 2507	1.4410 · S32750	300 °C	42.5	50 000 ppm	1.96	Moderate	Full seawater immersion, desalination
STRUCTURAL & WEAR-RESISTANT							
S355	EN 10025-2	400 °C	—	—	0.35	Excellent	Coated structural frames, dry indoor screens
S700	EN 10149-2	300 °C	—	—	0.55	Moderate	Heavy-load mining screens, vibrating decks
Hardox 450/500	SSAB proprietary	250 °C	—	—	0.70	Limited	Extreme abrasion, dry mineral processing

Chloride limits. Ambient readings shown; hot chloride service reduces the limit by a factor of roughly four (SS 316L drops from 1 000 to 250 ppm at elevated temperatures). For combined heat and chloride service above 60 °C, step up to SS 316Ti or duplex grades.

ENGINEERING CONTACT

Specify, validate, and source — in one workflow.

Open area, flow capacity, pressure drop, cylinder design, and material selection are all computed online against the profiles and grades in this catalogue. For application-specific geometry, custom assemblies, or a compound loading case, reach the engineering team directly.

WEB TOOLS

Open Area Calculator

Flow Rate Calculator

Cylinder Design Tool

Material Selection Wizard

Request for Quotation

ENGINEERING CONTACT

Technical consultation on custom profiles, compound-load geometries, and combined-stressor service.

info@adenwedgewire.com

Response within one business day.
