



— PRODUCT RANGE 2026

RESILIENT MILITARY LOGISTICS



— WHAT WE DO

OUR RANGE OF RAIL OFF-LOADING CAPABILITIES

BANAIR is a design and manufacturing group with wholly owned production facilities in the United Kingdom and Poland, delivering engineered solutions for NATO and allied armed forces for over 20 years.

The complete BANAIR ramp family covers every scenario — load-certified, procurement-ready, and available for direct multinational acquisition. More than 200 MUDR RAMPS are already in service with allied nations worldwide.



— THE CAPABILITY

BUILT FOR THE FIGHT PACKED FOR THE FLIGHT

Every military deployment moves on vehicles. At railheads, air terminals, and forward operating locations worldwide, forces depend on the ability to load, unload, wash, and inspect — quickly, safely, and without fixed infrastructure. No common standard exists. No certified, deployable solution has been available for multinational procurement — until now.



WHY CHOOSE BANAIR

BANAIR is a defence engineering group, not a fabrication shop. Every system is designed, calculated and proven before it carries its first load in service.

Manufacturing facilities in the **UK and Poland**. Over two decades of defence supply. BANAIR builds deployable infrastructure for armed forces, government and emergency services — bridging, modular ramps, deployable storage and expeditionary shelter systems.

Every product begins as a structural problem: a load case, a span, a time limit, an environment. Nothing in the range is an adapted commercial product. This is purpose-built defence engineering, from raw alloy to fielded system.

**MEASURED.
TESTED. PROVEN.**



**FIELD PROVEN.
FACTORY REFINED.**



Every new component goes onto the in-house rig first: **static proof loading beyond rated capacity**, fatigue cycling through thousands of deployments, destructive testing to establish true failure modes. Every published figure is backed by test data.

Every major development has been shaped by the people who use it. Military trials and evaluation exercises feed straight back to the drawing board. **The loop between field experience and factory engineering** is one of our most important advantages.

**LOADED, CYCLED, STRESSED AND BROKEN IN THE FACTORY —
REBUILT BETTER AS A RESULT.**

**WE DON'T JUST MAKE PRODUCTS.
WE ENGINEER EQUIPMENT
PEOPLE DEPEND ON.**

Modelled and stress-analysed in-house before a single component is cut. Built with precision CNC fabrication, certified welding and lightweight aluminium extrusion — to controlled tolerances, with full material traceability. Every section, joint and fitting is interchangeable across the product family. **It behaves in the field exactly as it behaves on the drawing.**

20+

YEARS OF DEFENCE
SUPPLY EXPERIENCE

3

MANUFACTURING
FACILITIES — UK & POLAND

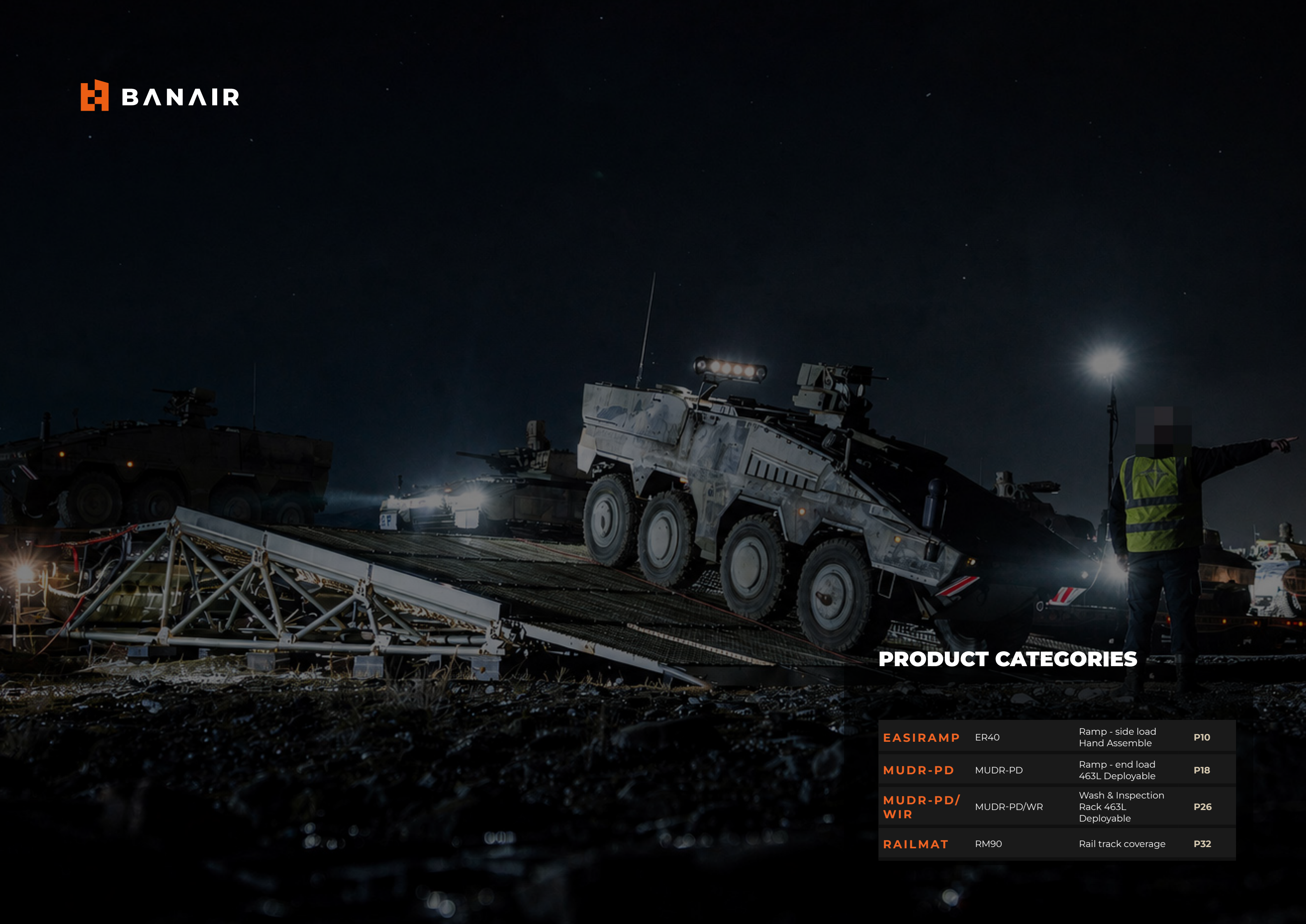
100%

IN-HOUSE DESIGN,
ANALYSIS & TESTING

U19F4

NATO NCAGE
REGISTERED SUPPLIER





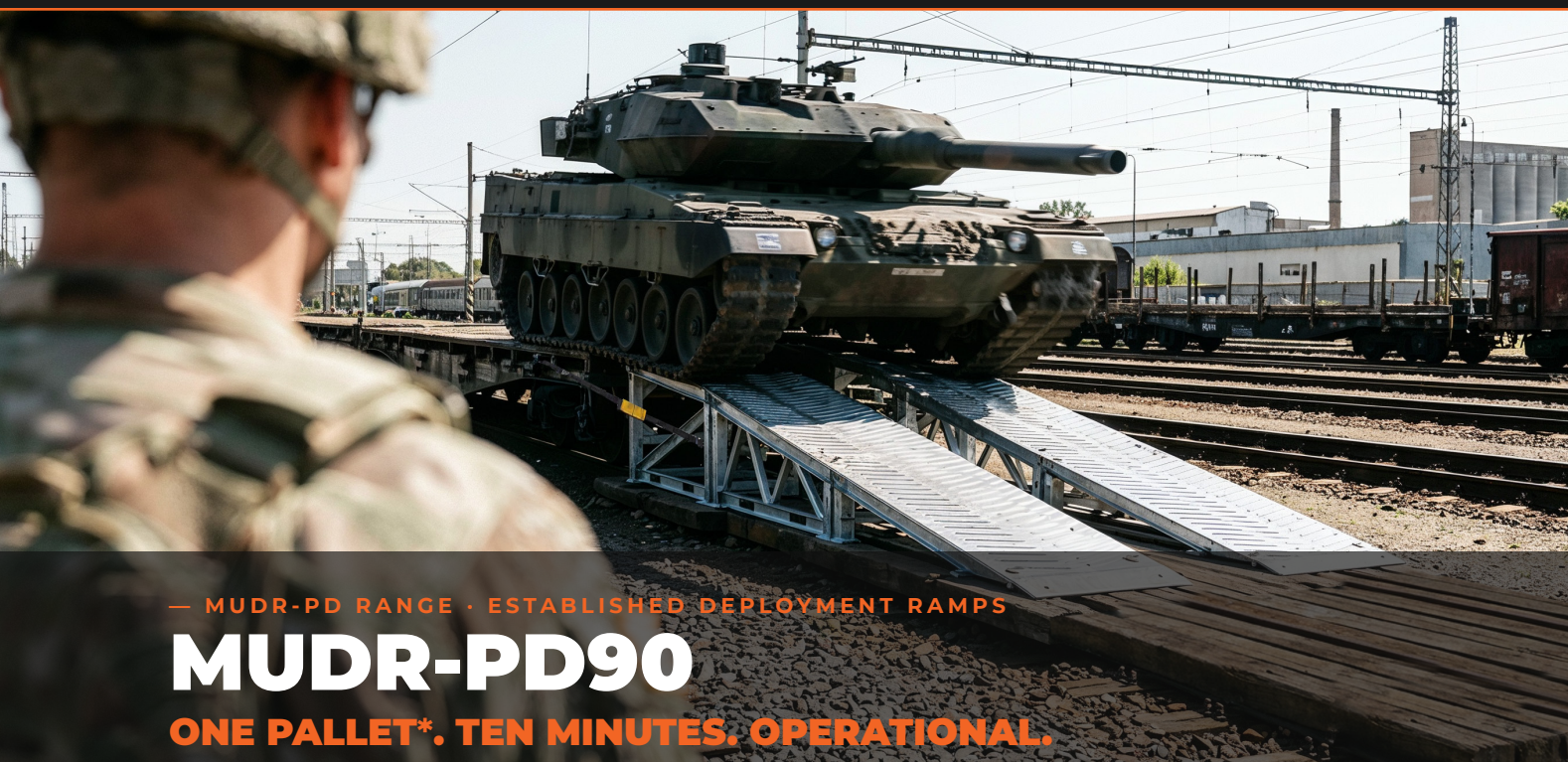
PRODUCT CATEGORIES

EASIRAMP	ER40	Ramp - side load Hand Assemble	P10
MUDR-PD	MUDR-PD	Ramp - end load 463L Deployable	P18
MUDR-PD/ WIR	MUDR-PD/WR	Wash & Inspection Rack 463L Deployable	P26
RAILMAT	RM90	Rail track coverage	P32

— BANAIR • RAMP SYSTEMS

EVERY LOAD. ANY LOCATION. NO COMPROMISE.

Load-certified • Rapidly deployable • NSPA-procurement ready
A complete family of ramp systems for every scenario
a deployed force will face



— MUDR-PD RANGE • ESTABLISHED DEPLOYMENT RAMPS

MUDR-PD90

ONE PALLET*. TEN MINUTES. OPERATIONAL.

The MUDR-PD (Modular Universal Deployable Response & Preparedness Device) delivers load-certified, adjustable-height steel ramps for the full military vehicle spectrum up to 90 tons. 463L air-pallet transportable and operational in 10 minutes, the MUDR-PD handles rail offload, truck offload, and retrograde washing without fixed infrastructure.



— HAND ASSEMBLED RAIL RAMP

EASIRAMP (ER40)

NO CRANE. NO DELAY. MLC-40 SIDE-OFFLOADING

The ER40 Rail Ramp is a new generation of portable rail side offload capability — lightweight aluminium spaceframe, flat-packed into a single tactical vehicle, assembled by a small team without cranes or specialist plant. Pre-position it before the train pulls in. When the consist stops, vehicles drive off immediately. Backed by the established MUDR-PD family of load-certified steel deployment ramps for heavier and longer-term operations.



— RAIL MAT

RM90

NO CAPS. NO LIMITS

RM90 RAIL MAT delivers modular steel panels that bridge ground to rail car, enabling 4-man crews to load and unload heavy armour at unimproved railheads with no specialist plant. Operational on any ground at any gauge, the RM90 is laid before consist arrival for true roll-on, roll-off capability — 90-ton capacity, standard or broad gauge, every time.

EASIRAMP

— ER40 RAIL RAMP

IN EVALUATION — AVAILABLE FOR PROCUREMENT

**SIDE LOAD
CAPABILITY**

**HAND ASSEMBLED
NO SPECIAL TOOLS NEEDED**

**LIGHTWEIGHT
ALUMINIUM CONSTRUCTION**

NO CRANE REQUIRED

Assembly and deployment by standard military crew using hand tools only

FLAT-PACKED TRANSPORT

Compact disassembled footprint — fits standard ISO container or cargo vehicle

ALUMINIUM SPACEFRAME

High-strength alloy construction; EB100 node connection system throughout

DUAL GAUGE COMPATIBLE

Configurable for standard and broad gauge rail operations

AUSTERE RAILHEAD

No site preparation required — operates on unprepared, unimproved ground

RAPID DEPLOYMENT

Crew-portable modular sections; pinned assembly with no specialist tools



CAPABILITY OVERVIEW

The ER40 Side Loading Ramp gives NATO forces the ability to load and unload wheeled and tracked vehicles at any railhead, on any standard or broad-gauge flat-bed rail car, without cranes, fixed ramps, or prepared infrastructure. Built from high-strength aluminium alloy using the proven EB100 spaceframe connection system, it is assembled by a small crew with hand tools alone, and its flat-pack design fits within a standard military cargo vehicle for deployment anywhere, in minutes. Because it doesn't depend on fixed loading gauges or end-of-consist ramps, the ER40 frees planners from the constraints of prepared railheads — vehicles can be positioned and moved wherever the mission requires, not just where infrastructure happens to allow it.

HANDLING & ASSEMBLY

- **Assembly:** The ER40 uses the same modular node connection system as the EB100 vehicle bridge. Components are crew-portable; no single item exceeds 20 kg. No specialist tools, cranes, or site preparation required.
- **Positioning:** The ramp is positioned alongside the rail car and secured by the crew. Rubber-pad ground feet distribute load on unprepared surfaces. Pre-positioning is possible before the consist arrives.
- **Disassembly:** Designed for repeated assembly and disassembly cycles. Anodised aluminium finish provides long-life corrosion resistance. Fully reusable and field-repairable.

EASIRAMP (ER40)

HAND-ASSEMBLED MLC-40 SIDE-OFFLOADING CAPABILITY



NO SITE PREPARATION REQUIRED

Rubber-pad ground feet distribute load on unprepared surfaces. The ER40 operates on ballast, road verge, or field — no concrete pad, no earthworks, no survey. Competing systems require firm prepared ground or fixed infrastructure to achieve rated capacity.

ROAD & RAIL — ONE SYSTEM

The ER40 shares its aluminium spaceframe with the EB100 vehicle bridge. The same components cross a gap on a damaged road or form a rail offload ramp. No competing system offers dual-mode capability — giving planners a single solution for multiple scenarios.

WELD-FREE ALUMINIUM CONSTRUCTION

6082-T6 aluminium with EasiLock™ cast node connectors — bolted, not welded. No corrosion, no specialist repair equipment in the field. Damaged sections are swapped individually. Competing steel-based systems corrode, require welding repair, and are significantly heavier to transport.

LIGHTEST COMPONENTS IN CLASS

At 20 kg maximum per component, the ER40 requires no cranes, forklifts, or lifting plant for assembly. Two soldiers can carry every section. No alternative system matches this — enabling genuine any-location deployment with no supporting equipment.

EASIRAMP

— ER40 RAIL RAMP

IN EVALUATION — AVAILABLE FOR PROCUREMENT

SIDE LOAD
CAPABILITY

RESTRAINING POINTS
CHAIN BACK TO RAILCAR

HAND ASSEMBLED
NO SPECIAL TOOLS NEEDED

LEVELLING PADS
JACK PADS - PART OF SYSTEM FOR
EASY GROUND LEVELLING.
Note: Ramp can slope down to end

MODULAR SECTIONS
ASSEMBLE TO DESIRED LENGTH

LOAD CAPACITY	MLC-40
RAMP LENGTH	APPROX 10.5m (including each section positioned on railcar).
RAMP WIDTH	MODULAR SECTION Assembly — each section 1.5m wide. Ramp shown = 12m wide.
OVERALL WEIGHT	TBC
ASSEMBLY TIME	TBC
CREW SIZE	Small team — no crane or specialist plant required
MAX COMPONENT WT	20 kg — same EB100 system components
TRANSPORT	Flat-packs into standard military cargo vehicle
CONSTRUCTION	High-strength aluminium alloy — EB100 spaceframe node system
FINISH	Anodised aluminium — military specification
RAIL GAUGE	Standard + broad gauge — configurable
LOAD TYPE	Side load — no end-of-consist access required



ONLY COTS SOLUTION AVAILABLE

Competing systems are locked to national government procurement channels and unavailable for allied export. The ER40 is procured under standard commercial terms — any NATO nation or partner can order, own, and operate it without programme access restrictions.

ISO CONTAINER DEPLOYABLE

The complete ER40 system packs into a standard 20 ft ISO container. It can be pre-positioned at any depot, airbase, or port worldwide and delivered by any standard logistics asset. No competing system offers equivalent containerised deployability.

ER40 | VEHICLE COMPATIBILITY

MLC-40 — TRACKED & WHEELED PLATFORMS IN NATO SERVICE

At MLC-40, the ER40 provides rail offload capability across the full range of NATO and partner IFV/APC platforms below MBT weight class, encompassing the major wheeled and tracked combat vehicle types in current service. The table below presents representative examples only and is not exhaustive of the platforms covered.

TRACKED PLATFORMS

VEHICLE	NATO USERS	WEIGHT
CV90 (all variants)	SE / NO / FI / DK / NL / EE / CH / CZ	30 – 37 t
M2 / M3 Bradley	US / GR	30 – 33 t
Lynx KF31	RO / LT	~38 t
Marder 1A5	DE / GR	28 – 30 t
Puma IFV (Level A)	DE	~31.5 t
ASCOD / Pizarro	AT / ES	35 – 38 t
Ajax (base config)	UK	~38 t
Warrior CSP	UK	25 – 28 t
K21 NIFV	KOR (NATO partner)	~26 t

WHEELED PLATFORMS

VEHICLE	NATO USERS	WEIGHT
Boxer (8×8)	DE / NL / UK / LT / AU	33 – 38.5 t
VBCI (8×8)	FR	~26 t
Piranha V (8×8)	CH / DK / RO	~30 t
Patria AMV / AMV35	FI / PL / SE / SI	22 – 28 t
Stryker (8×8)	US	17 – 19 t

Note: For wheeled vehicles, concentrated axle loading produces a higher effective MLC per tonne than equivalent tracked platforms. All vehicles listed above are within MLC-40 ramp capacity.





MUDR-PD range

The MUDR-PD range is a load-certified, fast-deployable ramp system providing loading, unloading, washing and inspection capability in a compact 463L air-pallet compatible footprint.

— 463L AIR PALLET COMPATIBLE

**DEPLOY
ANYWHERE
IN THE WORLD**

463L air pallet footprint enables worldwide strategic airlift — ship anywhere in the world, deploy immediately on arrival.



MUDR-PD50/90

— MODULAR UNIVERSAL DEPLOYABLE RESPONSE & PREPAREDNESS DEVICE

IN SERVICE — NATO • MULTIPLE ALLIED NATIONS

— 50 TON CAPACITY

MUDR-PD50



— 90 TON CAPACITY

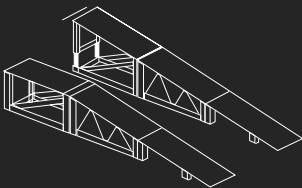
MUDR-PD90



CONSISTS OF ONLY
4 MAIN SECTIONS

RAPID
ASSEMBLY

BUILT IN
ADJUSTABLE HEIGHT



RAIL OFFLOAD
Loading and unloading from flat-bed rail cars

TRUCK OFFLOAD
Adjustable height for trucks and low-bed trailers

RETROGRADE WASHING
Drive-through pressure washing without fixed wash bay

ADJUSTABLE HEIGHT
42" to 58" in 2" increments — suits US and EU rail cars

RAPID DEPLOYABILITY
Folds into single 463L air pallet — assembled in 10 minutes

FORKLIFT MOVEABLE
Each section moveable by standard 4K forklift

CAPABILITY OVERVIEW

The MUDR-PD is a load-certified, fast-deployable ramp system providing loading, unloading, washing and inspection capability in a compact 463L air-pallet compatible footprint. Available in 50-tonne and 90-tonne configurations. 463L air pallet footprint enables worldwide strategic airlift — ship anywhere in the world, deploy immediately on arrival.

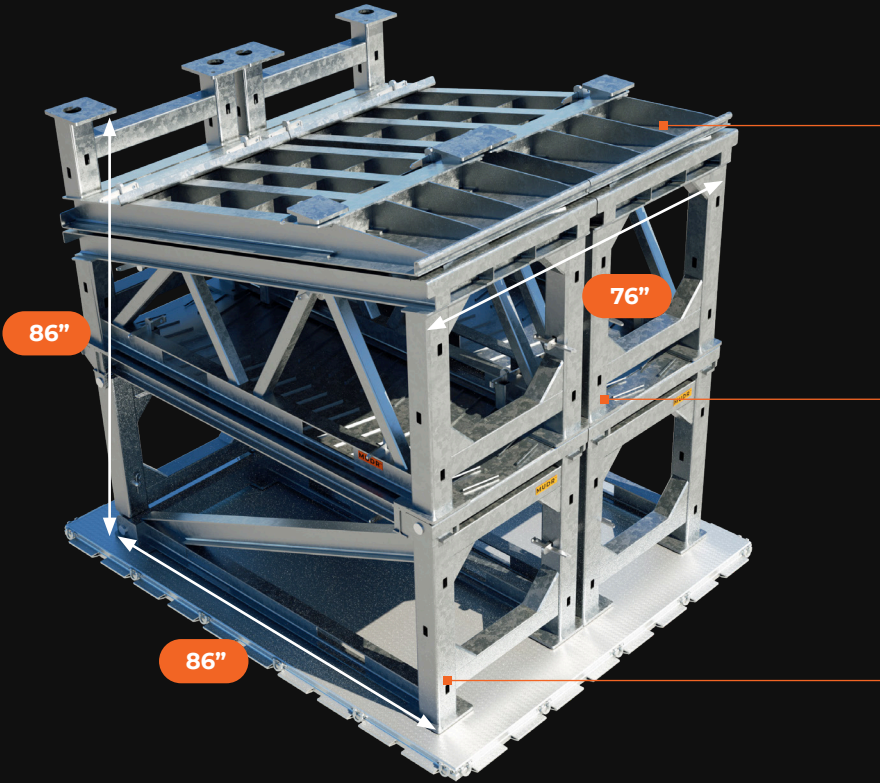


LOAD CAPACITY	MUDR-PD50: 50 t / PD90: 90 t
ADJUSTABLE HEIGHT	42" to 58" (2" increments)
RAMP LENGTH	22'-8" (6.91 m)
TRACK WIDTH	3'-1" (946 mm) — 38" deck
HEAVIEST SECTION	610 kg (1,342 lbs)
TOTAL KIT WEIGHT	2,830 kg (6,226 lbs)
ASSEMBLY TIME	10 minutes
463L TRANSPORT	1 kit per HCU-6/E 463L air pallet
CONTAINER	1 × BICON / 3 × 20ft ISO
CONSTRUCTION	Min. S355 steel — EN 10025 / ASTM A572 Gr.50
FINISH	Hot-dip galv. — EN ISO 1461 / ASTM A123 (85 µm min)
RAIL CROSSING	Yes
USE ON RAILS	No — alongside rail car

CONSISTS OF ONLY
4 MAIN SECTIONS

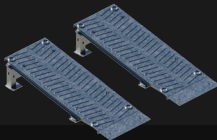
RAPID
ASSEMBLY

BUILT IN
ADJUSTABLE HEIGHT



Fixed 560 mm platform pair

Each section: 325 kg
Pair: 650 kg



Fixed 1070 mm platform pair

Each section: 480 kg
Pair: 960 kg



Adjustable platform pair

Each section: 610 kg
Pair: 1,220 kg



463L KIT INCLUDES:

- 4 inclined sections on top (22" x2) + (42" x2)
- 2 adjustable flat platform sections on bottom (42" to 58")

OPTIONAL EXTRA:

- HCU-6/E 463L Pallet (Netting Included)

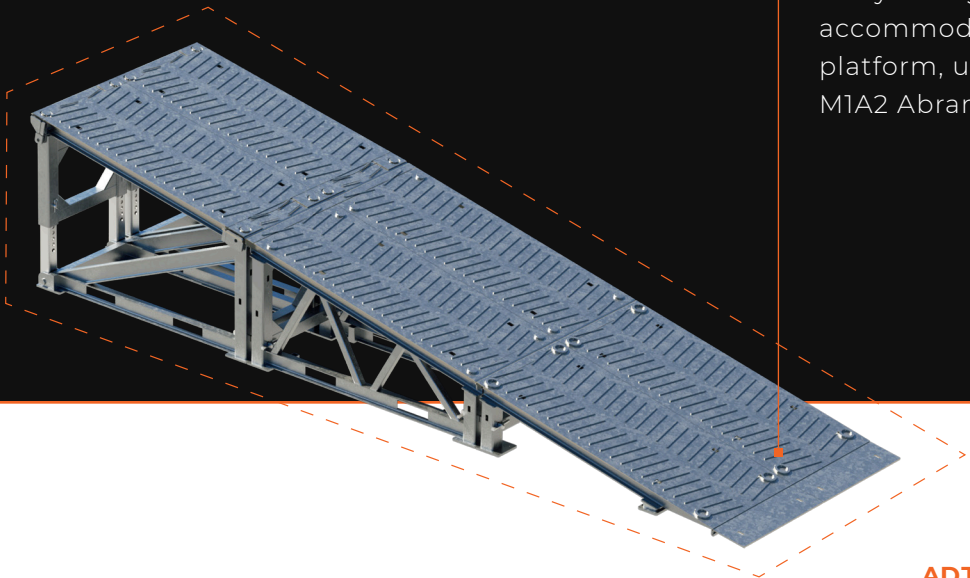
TRANSPORT OPTIONS

463L PALLET	1 kit
BICON CONTAINER	1 kit
20FT CONTAINER	3 kits



MUDR-PD KIT

Array configuration transversely to accommodate wider military vehicle platform, up to and including M1A2 Abrams Sep4 MBT

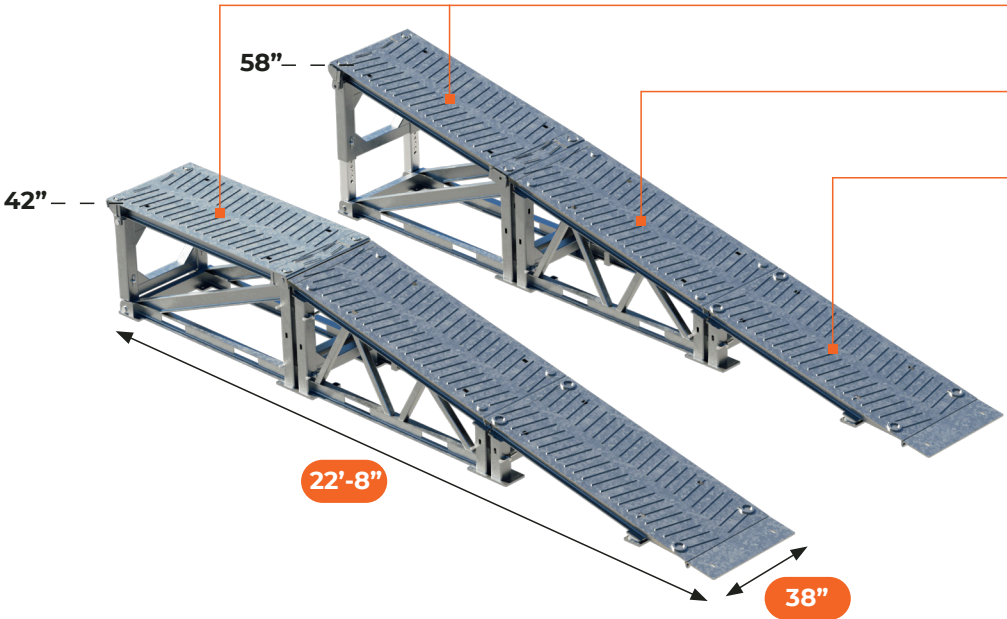


ADJUSTABLE PLATFORM PAIR

Adjustable loading heights:
42", 44", 46", 48", 50", 52", 54", 56", 58"

FIXED 42" PLATFORM PAIR

FIXED 42" PLATFORM PAIR



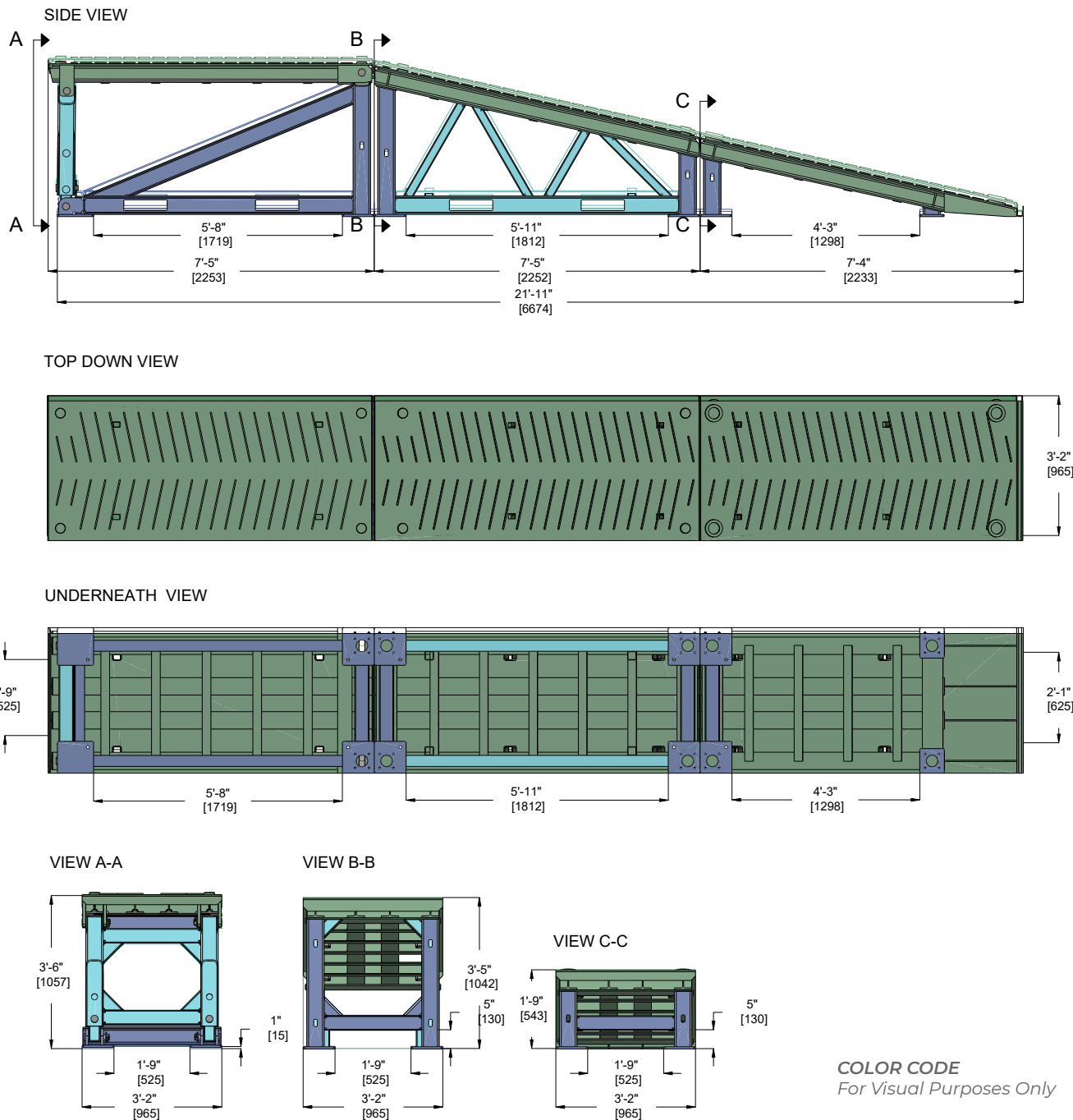
— MUDR-PD | FEATURES & DIMENSIONS

CONSTRUCTION

Structural Steel Sections and Plate, All steel is minimum S355 grade, non-alloy European standard (EN 10025), or ASTM A572 Grade 50 equivalent.

FINISH

Hot Dip Galvanized Conforms to EN ISO 1461, ASTM A123 standards for 85 micron minimum thickness



COLOR CODE
For Visual Purposes Only

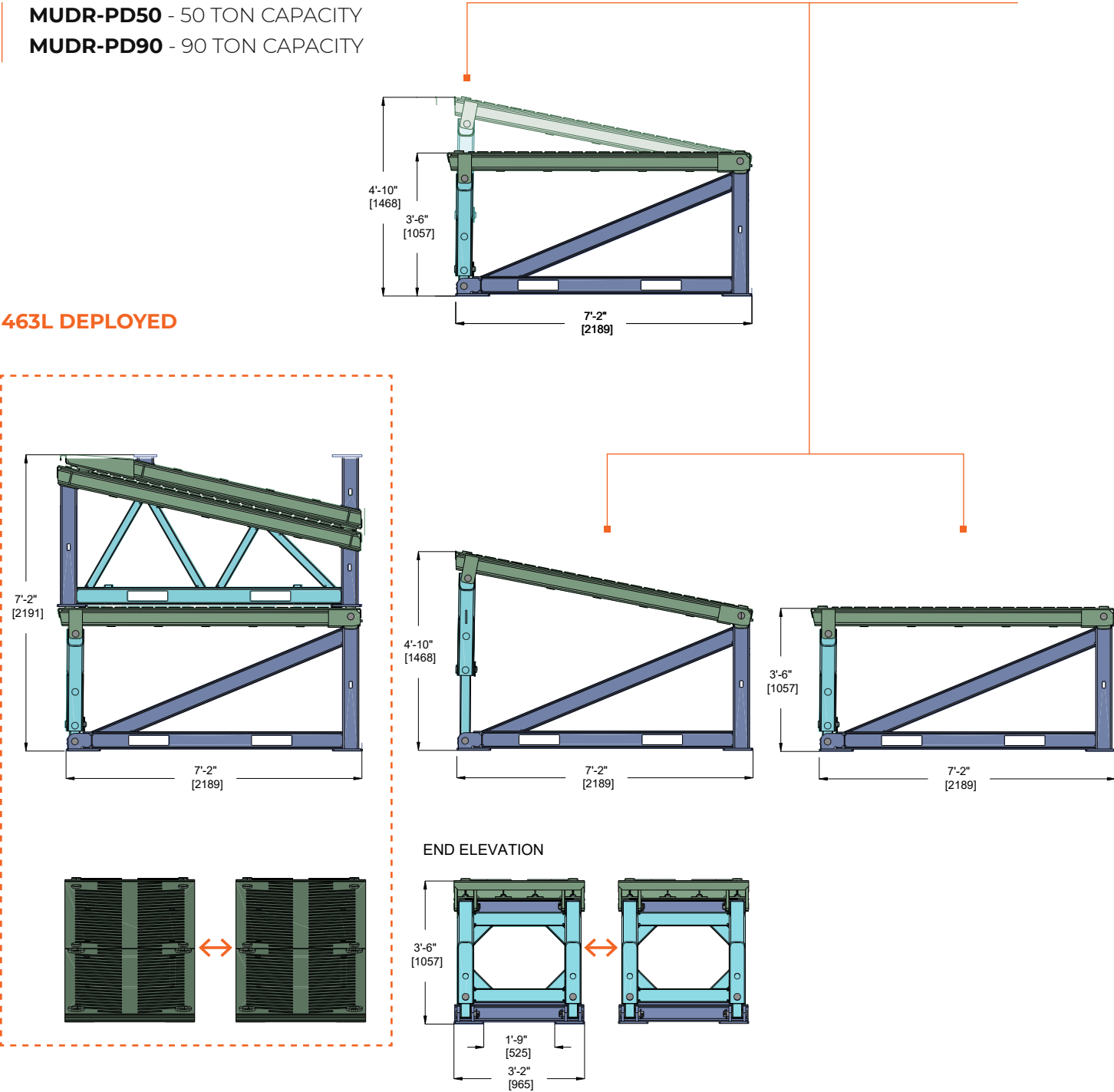


ADJUSTABLE PLATFORM

Adjustable loading heights:
42", 44", 46", 48", 50", 52", 54", 56", 58"

MUDR-PD50 - 50 TON CAPACITY
MUDR-PD90 - 90 TON CAPACITY

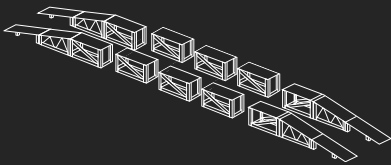
463L DEPLOYED





MUDR-PD/WIR

— MODULAR UNIVERSAL DEPLOYABLE WASH & INSPECTION RACK
IN SERVICE — NATO • MULTIPLE ALLIED NATIONS



LOAD CAPACITY	50 / 90 tons
PLATFORM HEIGHT	42" (1,067 mm) — fixed
TOTAL RAMP LENGTH	45'-4" (13.81 m)
FLAT SECTION	14'-3" (4.34 m)
TRACK WIDTH	3'-1" (38" deck / 965 mm)
HEAVIEST SECTION	610 kg (1,342 lbs)
TOTAL KIT WEIGHT	5,660 kg (12,452 lbs)
ASSEMBLY TIME	10 minutes
1 RAMP TRANSPORT	4 × 463L air pallets
DUAL SYSTEM	7 × 463L air pallets total
SCALABLE	Add fixed 42" platform pairs as required
CONSTRUCTION	Min. S355 steel — EN 10025 / ASTM A572 Gr.50
FINISH	Hot-dip galv. — EN ISO 1461 / ASTM A123 (85 µm min)

RETROGRADE WASHING

Drive-through pressure wash — no fixed facility required

TEMPORARY MAINTENANCE

Safe under-vehicle access for inspection and emergency repair

M88 RECOVERY OPS

Proven with M88 recovery vehicle maintenance operations

EXTENDABLE LENGTH

Add fixed 42" platform pairs to reach required system length

SCALABLE INVESTMENT

Nations holding MUDR-PD kits extend using same hardware

FORKLIFT MOVEABLE

All sections moveable by standard 4K forklift

SCALABLE
LENGTH

DRIVE THROUGH
WASH PLATFORM

HARDWARE
AS MUDR-PD

CAPABILITY OVERVIEW

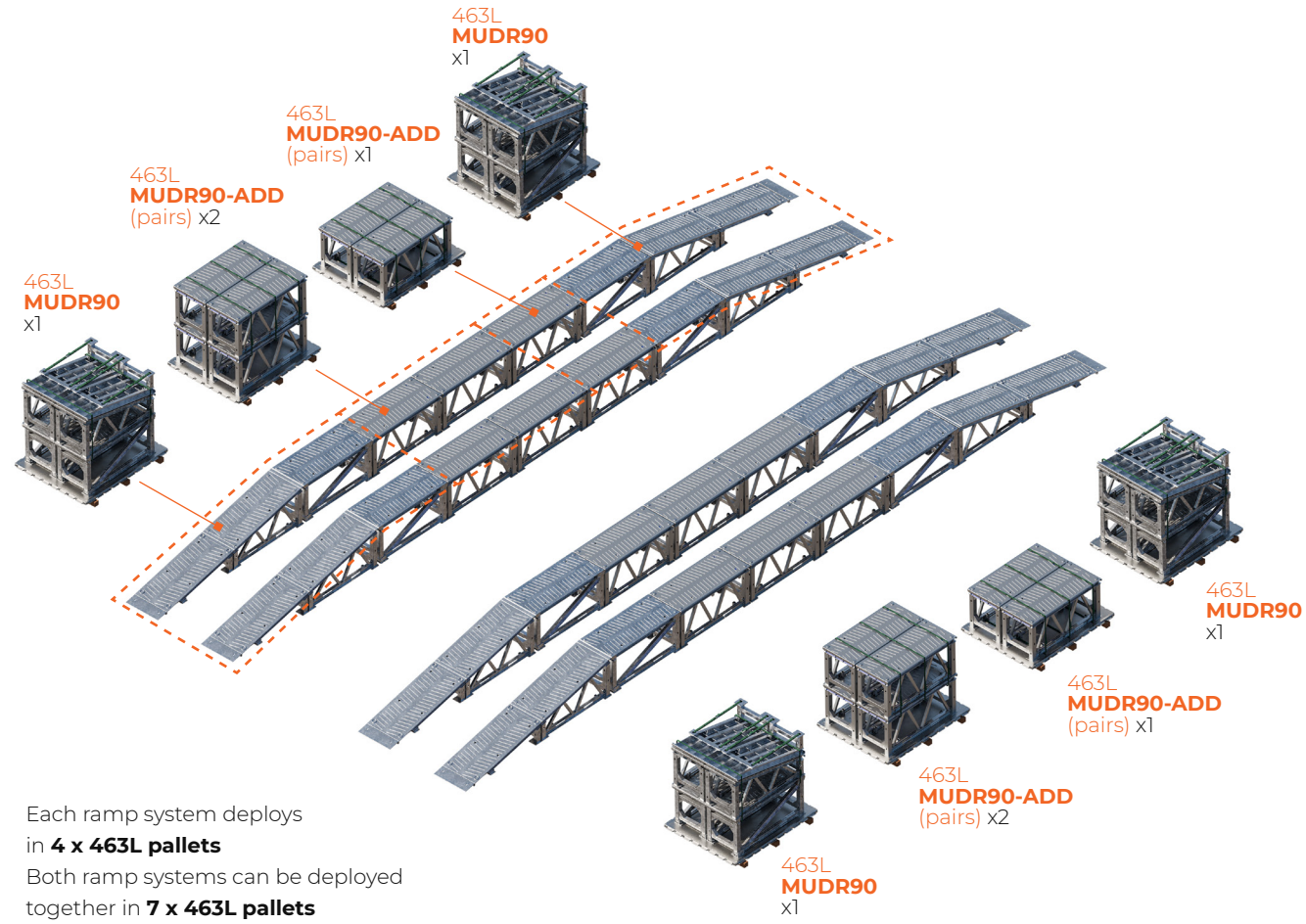
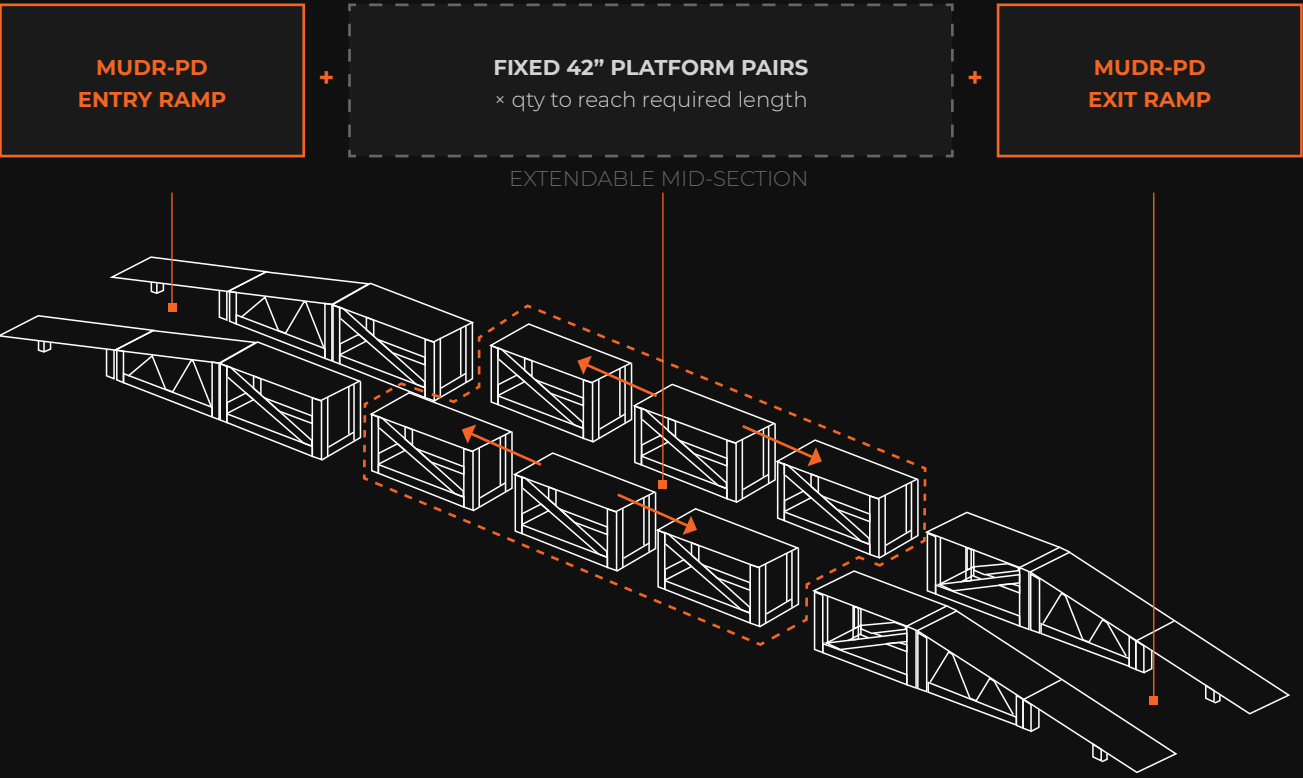
Load-certified wash and inspection platform system for retrograde operations. Flat mid-deck sections form a stable working surface; MUDR-PD end ramps provide certified vehicle access at both ends. Supports continuous through-flow retrograde washing and inspection operations, configurable to unit throughput requirements.

The system eliminates improvised vehicle decontamination solutions, improving personnel safety and ensuring compliance with environmental and biosecurity requirements.

HANDLING & ASSEMBLY

- **Assembly:** MUDR-PD/WR system assembles in 10 minutes. Fixed flat platform sections connect between two MUDR-PD end ramps using the same pin connection system.
- **Handling:** All sections are moveable by standard 4K forklift. No crane or specialist lifting plant is required at any stage.
- **Extension:** Add fixed 42" platform pairs to increase system length as required — no new programme or separate hardware needed.

— MUDR-PD/WR KIT



— MUDR-PD | FEATURES & DIMENSIONS

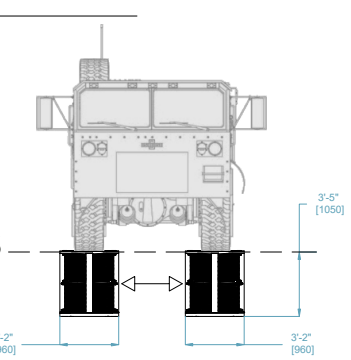
CONSTRUCTION

Structural Steel Sections and Plate, All steel is minimum S355 grade, non-alloy European standard (EN 10025), or ASTM A572 Grade 50 equivalent.

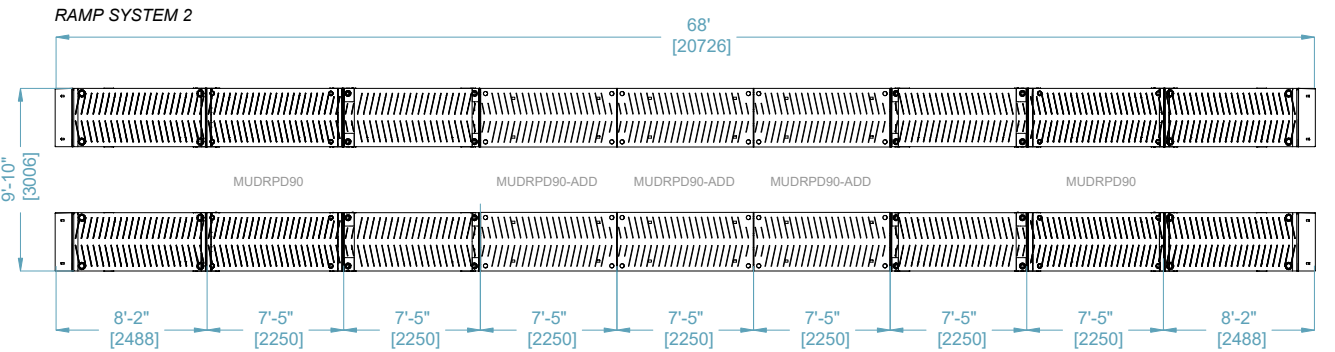
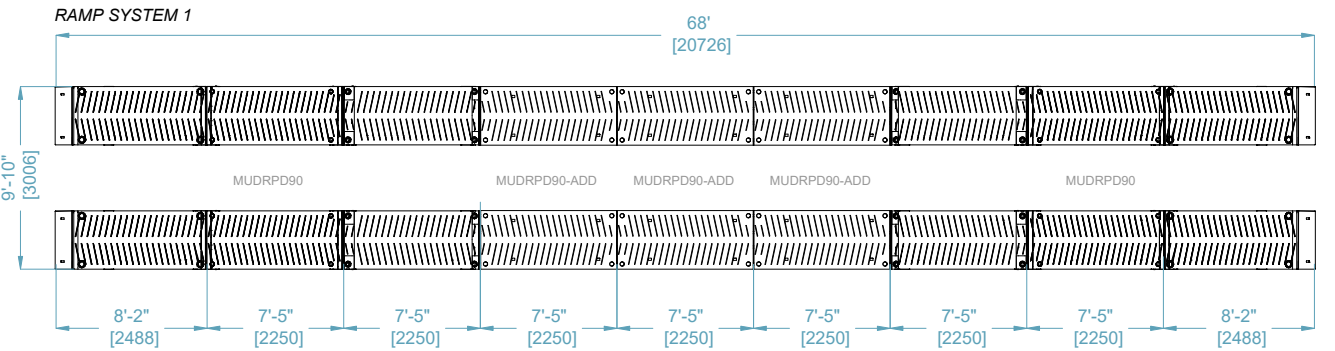
FINISH

Hot Dip Galvanized Conforms to EN ISO 1461, ASTM A123 standards for 85 micron minimum thickness

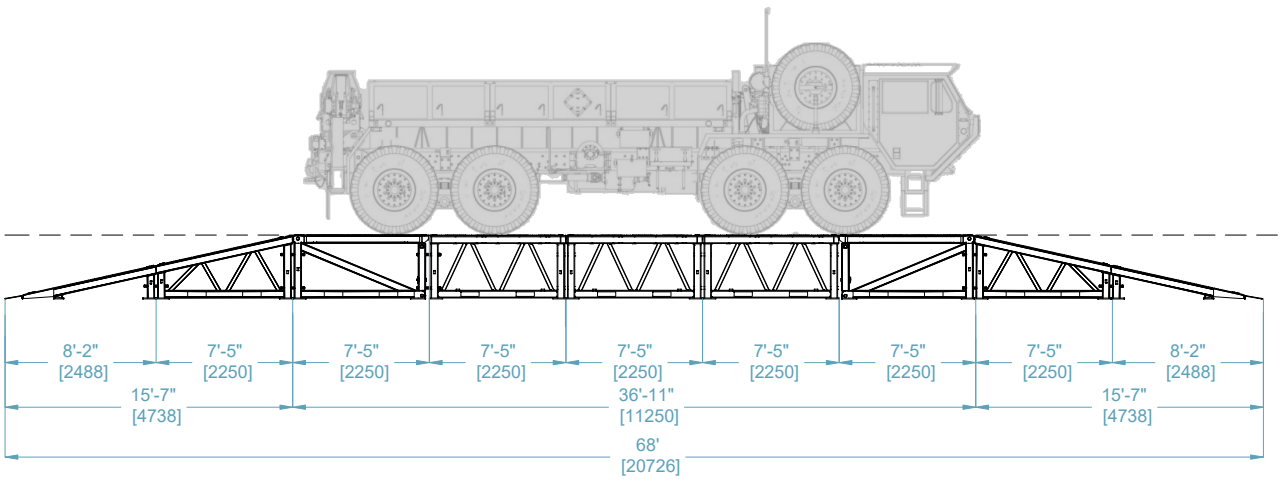
END ELEVATION



PLAN VIEW



SIDE ELEVATION







RM90

— RAIL MAT

IN SERVICE — NATO • MULTIPLE ALLIED NATIONS

LOAD CAPACITY	90 tons (maximum)
OVERALL LENGTH	25'-7" (7.8 m) — 6 sections
OVERALL WIDTH	22'-4" (6.8 m) standard gauge
NARROW WIDTH	21'-7" (6.58 m)
SECTION WIDTH	3'-7" (1,100 mm) per section
OVERALL WEIGHT	~8,950 kg (19,700 lbs)
RAIL GAUGE	Standard + broad — no rail contact
ANTI-CORROSION	Hot-dip galvanisation
OPERATING TEMP.	-20°C to +50°C
WARRANTY	5 years limited
ASSEMBLY	4-man manual / forklift-compatible
TRANSPORT	Packs down — rapid deployability

USE ON BOTH GAUGES

Standard and broad gauge — no rail contact

90 TON CAPACITY

Rated for continuous extreme duty loading and unloading

4-MAN ASSEMBLY

Manual handling only — no specialist plant required

PACKS DOWN

Disassembles for containerised transport and rapid deployability

SCALABLE INVESTMENT

Mat spans across rails — does not load or damage track

NON-SLIP SURFACE

Anti-slip deck panels for wheeled and tracked vehicle operations

PACKS DOWN RAPID DEPLOY

4 PERSON ASSEMBLY

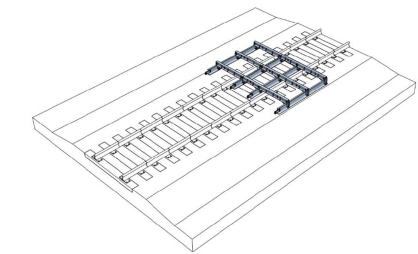
NO CONTACT WITH RAIL

HANDLING & ASSEMBLY

- **Mechanical handling:** The RM90 can be moved by forklift truck or other suitable lifting device using standard lifting practices. Use of lifting equipment is recommended for transport and assembly of the mat.
- **Manual assembly:** The RM90 can be assembled by manpower alone if required. Personnel assigned to lift individual elements must be adequate to element weights and individual lifting capabilities. Decks and main beams should be lifted by a minimum of 4 men.
- **Important:** The mat can only be moved in a disassembled state. Once assembled on the ground it must not be moved.

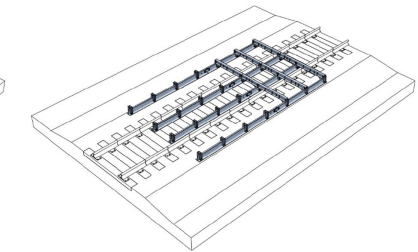


— RM90 | ASSEMBLY SEQUENCE



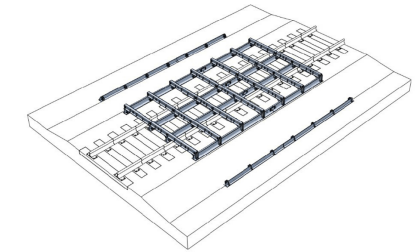
01
Main longitudinal beams

Place main longitudinal beams (type 1) along the rail track. Beams can support directly on rectangular sleepers or on the gravel. Beams are to support on the same level.



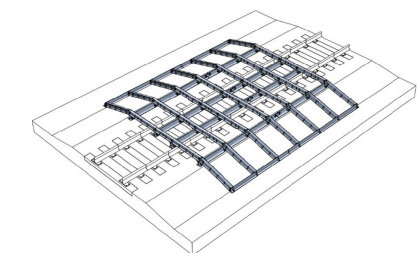
02
Main cross beams

Connect two main cross beams with longitudinal beams and bracing. Check diagonal for squareness and adjust geometry as required. Connect third main cross beam with longitudinal beams.



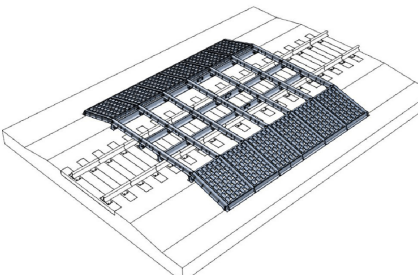
03
Main longitudinal beams

Extend main longitudinal beams. Install main longitudinal beams (type 2). Patch beam support as required.



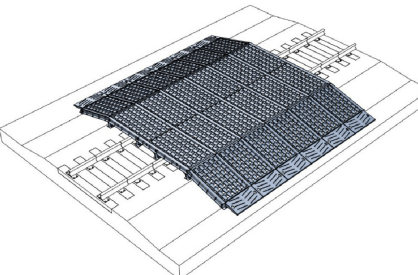
04
Main cross beams

Install all remaining main cross beams. Place longitudinal edge beams roughly in position.



05
Side cross beams

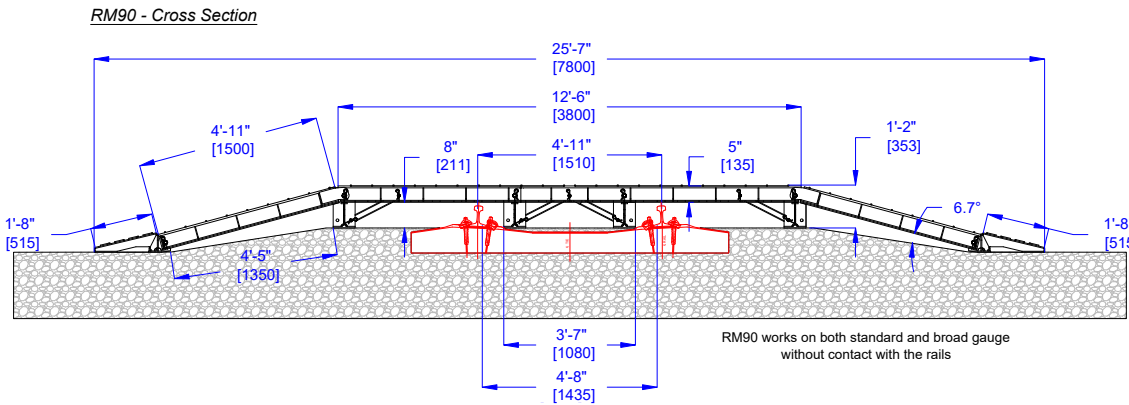
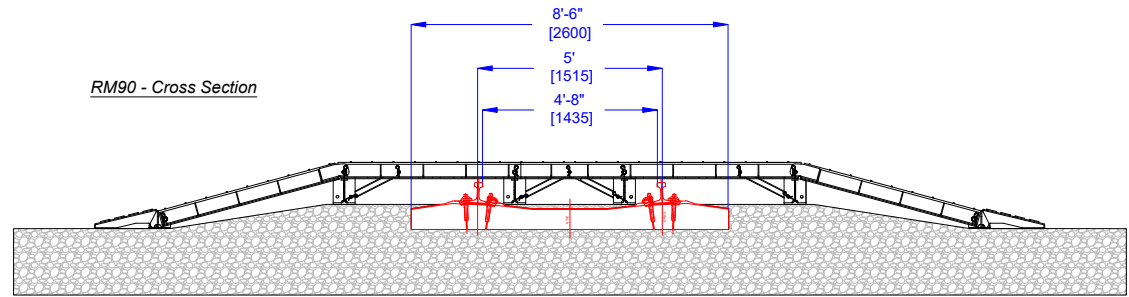
Install side cross beams between main and edge longitudinal beams. Ensure main and side cross beams are in line.



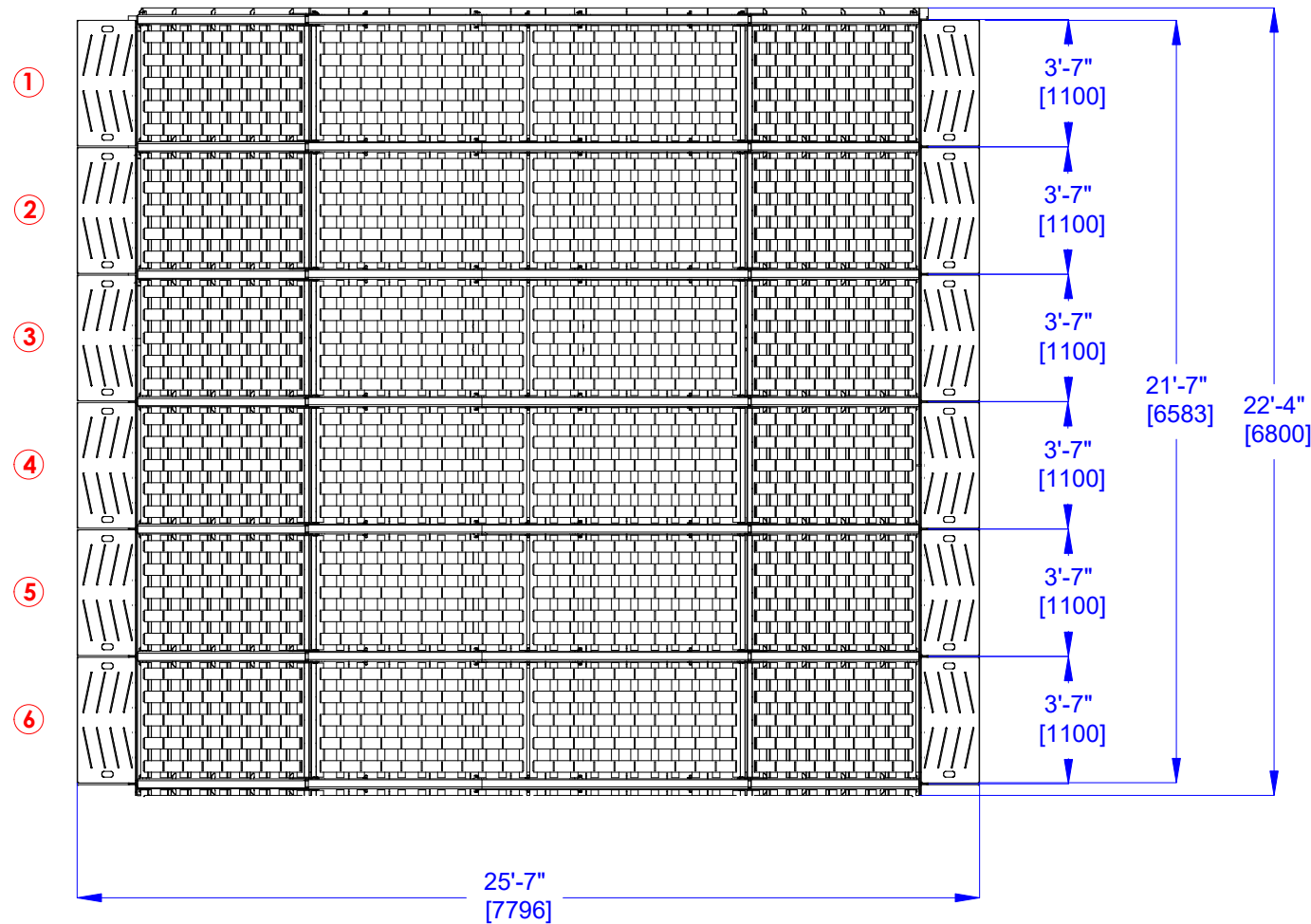
06
Middle decks and drive-on wedges

Place in middle decks. Place drive-on wedges. Make sure security pins are aligned out of collision with decks.

— RM90 | FEATURES & DIMENSIONS



RM90 - 6.5M Top View
6 SECTIONS LONG



— NATO INTEROPERABILITY

BUILT BY NATO FOR NATO

NO ITAR. NO EXPORT DELAYS.

Designed and manufactured in the United Kingdom and Poland. No dependency on US export licences. No Buy American Act barriers. NSPA member nations can procure directly — no single-nation supply chain risk.

INDUSTRIAL PARTICIPATION READY

BANAIR's European manufacturing footprint in the UK and Poland meets industrial participation requirements for Poland, Italy, and other nations — a condition only BANAIR can satisfy for this category of equipment.

ECONOMIES OF SCALE VIA NSPA

BANAIR supports consolidated multi-nation procurement through NSPA's support partnership model. Consolidating requirements across allies reduces unit cost and simplifies logistics interoperability for common equipment.

ALREADY IN USE

BANAIR products are installed at USAF and allied military installations worldwide. NSN application in process. Products orderable through established defence procurement frameworks now — no new programme required.

NSPA

Direct multinational acquisition through NATO Support & Procurement Agency support partnership framework

DE&S / MOD

UK MoD Defence Equipment & Support — primary gateway for formal UK military acquisition

US ARMY

Allied nations procure directly through established national defence procurement frameworks

Contact us to discuss a trial deployment
sales@ban-air.com



ban-air.com
sales@ban-air.com
United Kingdom | Poland | Global