

# TB 550 PLUS FENCE

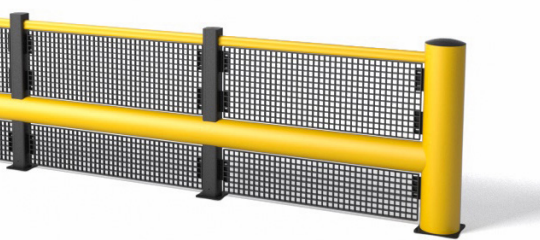
## SAFETY BARRIERS






Revision: 30 May 2024 5:04 PM  
Boplan reference: TA5500...

### PRODUCT SPECIFICATIONS

APPLICATION	
Environment	Perimeter edge protection in Multi-Storey Car Parks / Surface Car Parks / Access Ramps etc.
MATERIAL	
Posts and rails	Extrilene® - UV resistant - Fire class E <sup>+</sup> - Non conductive - Impervious to most chemicals <sup>**</sup>
Caps	Sustainable elastomer
Mesh panel	Glass fiber reinforced composite
STANDARD COLOURS	
Mid post	Black RAL 9005
End post/ Impact tube	Yellow RAL 1003
Mesh panel	Black RAL 9005
BASEPLATES	
	ZC / Non-countersunk
Material	Steel 37
Coating	Electroplated + Laquered
Colour	Mat black

\*Classification according to EN 13501-1:2007 +A1:2009 - Fire classification of construction products and building elements.  
\*\*Ask your local sales office for resistance to specific chemicals.




FIXATIONS			ZC (Zinc coated)	SS (Stainless steel)
STANDARD	Wedge anchor		M12 x 120mm	M12 x 120mm
	Anchor rod (Chemical)		M12 x 120mm + Chemical resin	M12 x 120mm + Chemical resin
ALTERNATIVES	Concrete screw		Ø12mm x 100mm	Not available
	Asphalt anchor		Bolt M10 x 40mm + Screw Ø16mm	Not available
	Spit anchor		Bolt M12 x 100mm + Plug Ø20mm	Not available


**FEATURES AND FUNCTIONALITY - TB 550 PLUS FENCE**

SIZE	
Height end posts	1160 mm
Height mid post	1150 mm
Profile section tubes	Ø200 mm (11 mm thick)
Profile section end posts	Outer tube: Ø250 mm (11 mm thick) Inner profile: 112mm x 112 mm (10 mm thick)
Profile section mid posts	Profile: 112 mm x 112 mm (10 mm thick)
Standard rail length	1350 mm (1600mm center - center)
Baseplate	End Post: 275 mm x 275 mm (10mm thick) Mid Post: 180 mm x 180 mm (10mm thick)
Mesh inner dimension	33 mm x 33 mm
Mesh wall thickness	5 mm
Mesh panel total thickness	15 mm

REQUIREMENTS	
Concrete quality	minimum C25/30
Concrete floor plate thickness	minimum 150 mm
Concrete slab dimension around posts (mm)	600 (h) x 600 (w) x 500 (d)
Operational temperature	-10°C up to +40°C
Water and humidity	<b>Steel (standard):</b> dry indoor use only. <b>Zinc coated:</b> outdoor use in most environments. <b>Stainless Steel:</b> outdoor use or frequent exposure to water and humidity.



### IMPACT LABEL FOR SAFETY BARRIERS

BOPLAN TB 550 PLUS FENCE		
IMPACT RATING	45°	90°
E80 >	< 80 kJ	
E60 >	< 60 kJ	
E50 >	< 50 kJ	
E40 >	< 40 kJ	
E35 >	< 35 kJ	
E30 >	< 30 kJ	<b>25,9 kJ</b>
E25 >	< 25 kJ	
E20 >	< 20 kJ	<b>18,3 kJ</b>
E15 >	< 15 kJ	
E10 >	< 10 kJ	
E5 >	< 5,0 kJ	
E2 >	< 2,5 kJ	

**TEST CONDITIONS**


TEMPERATURE: 20°C  
IMPACT HEIGHT: 460 mm  
IMPACT ANGLE: 90°  
TEST FLOOR: CONCRETE C25/30 - 160 mm  
MANUFACTURER ANCHOR PULL OUT: 7,9 kN

**TEST VEHICLE**

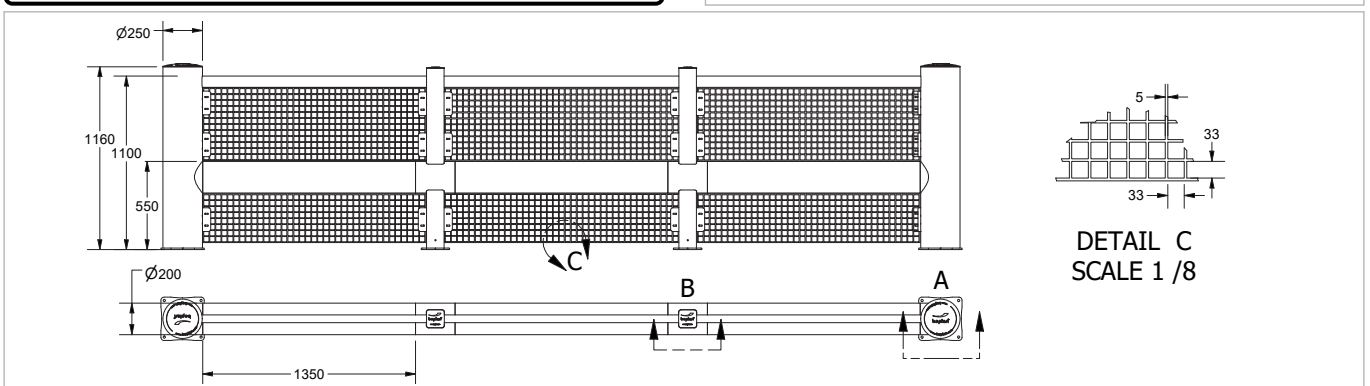
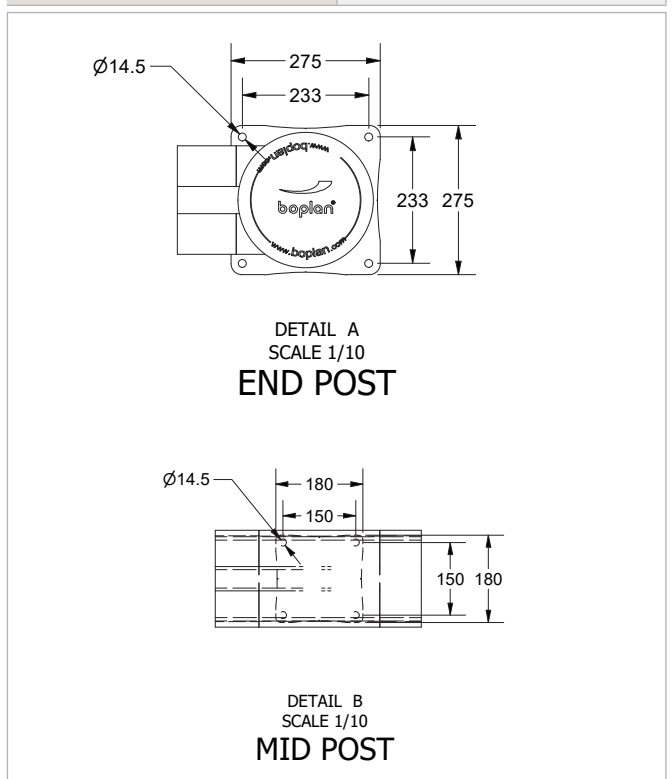
WEIGHT: 2300 KG  
TYPE: COMMERCIAL FORK LIFT  
SIZE (L x W x h): 1890 x 1020 x 1970 mm  
CONTACT AREA: STEEL BUMPER WIDTH: 600 mm

**ACCREDITED TEST LABORATORY**

620 Route des Fromentaux  
01500 Saint-Maurice-de-Rémens  
01360 Beligneux  
France

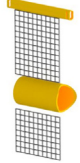


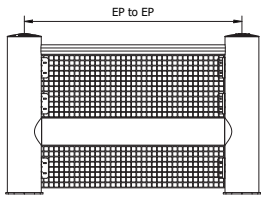
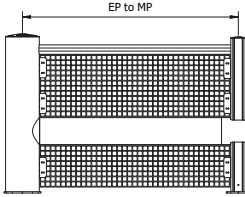
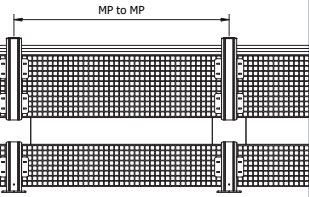
**SUCCESS CRITERIA** VEHICLE STOPPED - ASI (ACCELERATION SEVERITY INDEX) < 0.5



## FEATURES AND FUNCTIONALITY - TB 550 PLUS FENCE

POSTS		
End post - ZC - YE	TA5500-0001-EPYEZ	
Mid post - ZC - YE	TA5500-0001-MPYEZ	
Corner post 90° - UP - YE	TA5500-0001-CPUYEZ	
Corner post 90° - DOWN - YE	TA5500-0001-CPDYEZ	

CURVES		
Conn.tube Ø250 - 90° Curve 350mm - YE	TA5500-0350-C259YE	

STANDARD RAIL SETS				
Tube length	CC length	End post to End post	End post to Mid post	Mid post to Mid post
1350 mm	1600 mm	TA5500-1350-1600YE	TA5501-1350-1600YE	TA5502-1350-1600YE
1200 mm	1450 mm	TA5500-1200-1450YE	TA5501-1200-1450YE	TA5502-1200-1450YE
1050 mm	1300 mm	TA5500-1050-1300YE	TA5501-1050-1300YE	TA5502-1050-1300YE
900 mm	1150 mm	TA5500-0900-1150YE	TA5501-0900-1150YE	TA5502-0900-1150YE
850 mm	1000 mm	TA5500-0850-1000YE	TA5501-0850-1000YE	TA5502-0850-1000YE
600 mm	850 mm	TA5500-0600-0850YE	TA5501-0600-0850YE	TA5502-0600-0850YE
				

**PRODUCT COMPLIANCE - TB 550 PLUS FENCE**
**BS6399 - part 1: 1996**

In short	This British Standard defines how to calculate the minimum horizontal force required to be withstood by a vehicle barrier.
Assumptions	Minimum car bumper height: 375 mm Width of impact vehicle: 1500 mm  m: mass car: 1500 kg v: speed car: 4.5 m/s (=16.2 km/h) D <sub>c</sub> : Deformation of car bumper: 100 mm D <sub>b</sub> : Deformation of barrier: 500 mm
force (F)	According to the standard, two methods are described to calculate the minimum force a vehicle barrier needs to withstand: 1/ for rigid barriers 2/ for flexible barriers Since Boplan barriers are flexible, the second method is used. The formula to calculate the force:  $F = (0.5 \times m \times v^2) / (D_c + D_b)$ $F = 0.5 \times 1500 \times 4.5^2 / (100 + 500)$ $F = 25 \text{ kN}$  The BS6399 describes 3 different minimum force requirements for parking barriers: 1/2 x Force: Where safety barriers protect both sides of parking ramps. 1x Force: All other safety barrier areas. 2 x Force: Where safety barriers are exposed to a potential run-up area, in a straight length, of more than 20 meters.
1 x force	25 kN
2 x force	50 kN
1/2 force	12.5 kN
<b>CONCLUSION</b>	The Boplan Armco barrier has been positively tested against the 3 force levels and is therefore fully compliant with BS6399.

**BS6180:1995**

In short	This British standard predates the BS6399 and has the below requirements.
Minimum height barrier	1100 mm
Maximum gap (where a sphere can pass through)	100 mm
Minimum handrail loading (force)	1.5 kN
Minimum infill panels loading (force)	1.5 kN
<b>CONCLUSION</b>	The Boplan Armco barrier is fully compliant with BS6180:1995

**Other recommendations**

In short	A recommendation published in 2002 by the British Institute of Civil Engineers (ICE)
Minimum impact height	445 mm
Anti-climb barrier	The barrier should be designed in such a way that it is not possible to climb it.
<b>CONCLUSION</b>	The Boplan Armco barrier fulfils the recommendations.

**SAFETY BARRIER STRENGTH REQUIREMENTS FOR PARKINGS ACCORDING TO BS6399**

-  1/2x force
-  1x force
-  2x force

