

# SUBDUE® TR18 PLUS

## lightweight noise barrier

Subdue® TR Plus is a multi-layered internally damped noise barrier panel constructed from layers of birch veneers combined with acoustic barrier. Higher amount of thinner veneer layers give Subdue TR Plus it's superior strength when compared against plywoods commonly used in construction.

Veneer lay-up is done in cross pattern to add not only strength but also increase internal damping of the panel. Utilising phenol-formaldehyde resin between the layers of veneer gives plywood resistance against environment, weather conditions, hot and cold water as well as steam.

Chemically treated against fungal growth as well as termite and other insect attacks, results in excellent durability of the product. It is ideally suited to floor construction in commercial and rail constructions. Thickness of 16 mm and 18 mm are commonly used in flooring applications however additional thicknesses outside this range can be produced depending on customer specification.

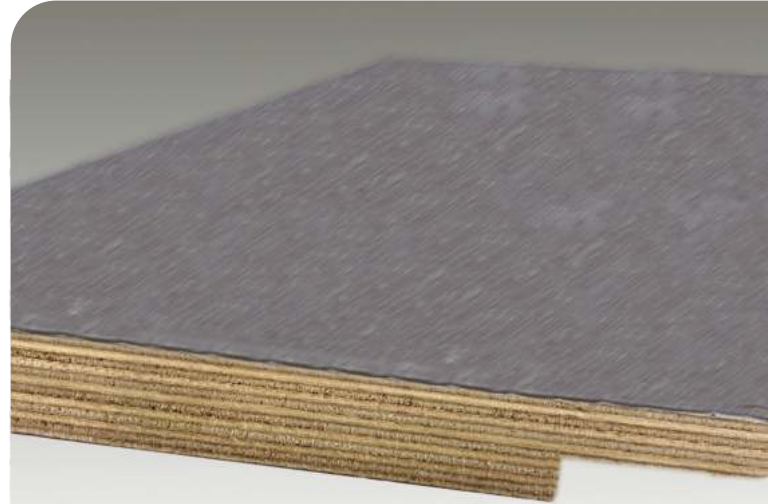
Coincidence dip is a common phenomenon in flooring panels, that adversely impacts the sound transmission loss performance in materials such as timber, plywood, sheet metal, low density rigid foams and hollow core walls. The unique multi-layered assembly of Subdue, reduces the impact of the coincidence dip, thereby maintaining the performance of the panel. In addition, the acoustic barrier provides further improvement in acoustic performance by damping resonances within the panel.

Subdue TR Plus works by reflecting, absorbing and damping the vibration and transmission of sound through walls and floors, reducing the noise generated from sources such as mechanical equipment, engines and electronic audio devices.

Pyrotek endorses forest sustainability and the preservation of natural environment. We procure highest quality materials from suppliers who hold FSC Certification (Forest Stewardship Council) and PEFC (Programme for the Endorsement of Forestry Certification) amongst other certification programmes. Subdue TR grade achieves E1 class when tested to EN13986 and A class according to standard EN1084.

### SPECIFICATIONS

Available	Standard Sheet size: 2400 mm x 1200 mm trimmed
	2000 mm x 3650 mm maximum
	Birch Plywood (Standard)
	Other sizes available on request depending on MOQ



## applications

- Flooring for rail carriages, trucks and trailers
- Exterior formwork
- Used in conjunction with an isolation mounts to create floating flooring
- Factory flooring
- Scaffolding platforms

## features

- Highest possible fire rating according to EN45545-2
- Birch based plywood for maximum strength
- Low weight to strength ratio
- Phenol-formaldehyde based adhesive for exterior applications
- Various surface finish options from phenolic film to knurled surface
- Low moisture content



## PRODUCT SPECIFICATIONS

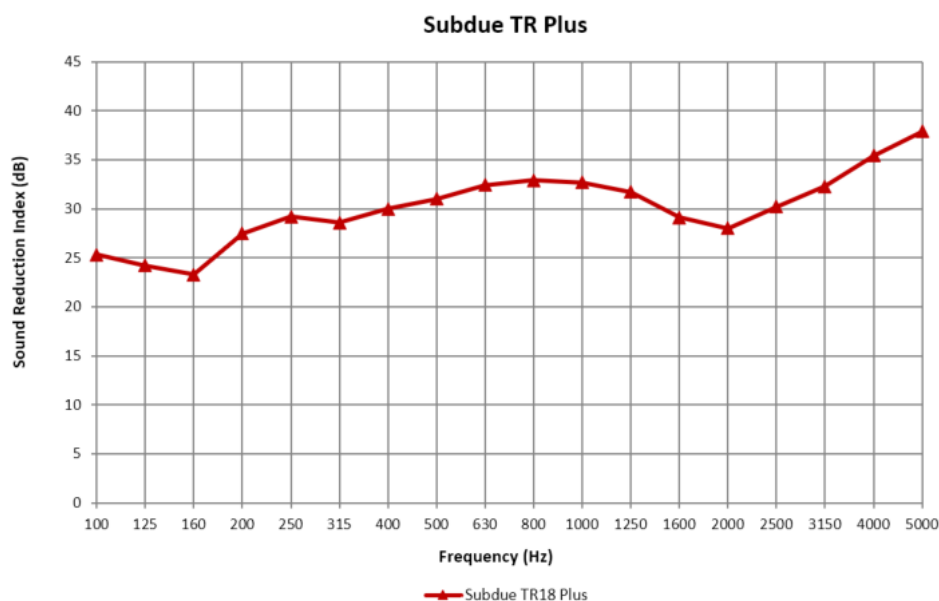
Grade	Nominal total thickness (mm) EN 315	Plywood thickness (mm)	Barrier thickness (mm)	Nominal weight (kg/m <sup>2</sup> )	Nominal density of plywood (kg/m <sup>3</sup> ) EN 323	Surface finish EN 635-2	Classification by surface appearance EN 635-2	Moisture content EN 322	Thermal conductivity (K value) ASTM C518	Operating temperature
Subdue TR18 Plus	20 (± 1 mm)	18	2	17.1 (±10%)	730 (±20 mm)	Phenolic film 220 g/m <sup>2</sup> on both faces	Grade III	9% ± 3%	0.157 W.m <sup>-1</sup> .K <sup>-1</sup> *	-25 to 70°C continuous, -25°C to 90°C intermittent

Tolerances: Width, length and modified parts: ± 1 mm; linear and angular dimensions (EN 324) : 1mm/m; Flatness: 1mm/m;

\*Calculated value

## ACOUSTIC PERFORMANCE

Frequency (Hz)	Subdue TR18 Plus
100	25.3
125	24.2
160	23.3
200	27.5
250	29.2
315	28.6
400	30.0
500	31.0
630	32.4
800	32.9
1000	32.7
1250	31.7
1600	29.1
2000	28.0
2500	30.2
3150	32.3
4000	35.4
5000	37.9
Rw	31
STC	31



Tested to AS 1191 (ISO 10140) at CSIRO, Australia

Report Number: TL719-02-1

## MATERIAL PROPERTIES

Description	Standard	Results	Report Number
Resistance to insert torque	Pyrotek test method 07021AR	20 N m Max	07021AR
Bonding validation substrate to plywood	EN 28510 ISO8510	24 N / 25 mm	06821JY
Determination of moisture resistance under cyclic test conditions	EN 321	Moisture increase <5% Loss in bending strength and adhesion between layers <10%	07721JY2
Determination of static hardness	ISO 13061-12	36 N / mm <sup>2</sup>	06821JY3
Determination of resistance to indentation - Test method	EN 1534	47 N / mm <sup>2</sup>	06821JY2
Testing and classification of the durability to biological agents of wood	EN335	Class D (Durable) Class 1 (very durable)	Wolman statement 31-Mar-2021
	EN350		
Method of test for determining the resistance against wood destroying Basidiomycetes	ENV 12038		
Determination of modulus of elasticity in bending & bending strength	EN 310	Class E <sub>0</sub> 80 (longitudinal > 7200 N/mm <sup>2</sup> )  Class E <sub>90</sub> 60 (transverse > 5400 N/mm <sup>2</sup> )  Class F <sub>0</sub> 40 (longitudinal > 60 N/mm <sup>2</sup> )  Class F <sub>90</sub> 35 (longitudinal > 52 N/mm <sup>2</sup> )	07721JY2
	EN 12663	330kg/m <sup>2</sup> load max deflection 1.5 mm  510kg/m <sup>2</sup> load max deflection 2.5 mm	07821BD
Plywood - bonding quality - Part 1 : test method	EN 314-1	4.3 N/mm <sup>2</sup>	07721JY2
Determination of withdraw capacity of fasteners	EN 13446	8g chipboard screw: >1200 N  15mm insert nut: >1200 N	06821BD
Resistance to insert pull - shear test	Pyrotek test method 06821BD	8g chipboard screw: >700 N  15mm insert nut: >700 N	06821BD
Fire and Smoke	EN 45545-2	Subdue TR: R10 HL3	Complies
Sound transmission loss	ISO 717-1, ISO 10140	RW 33 dB	TL719-04-1