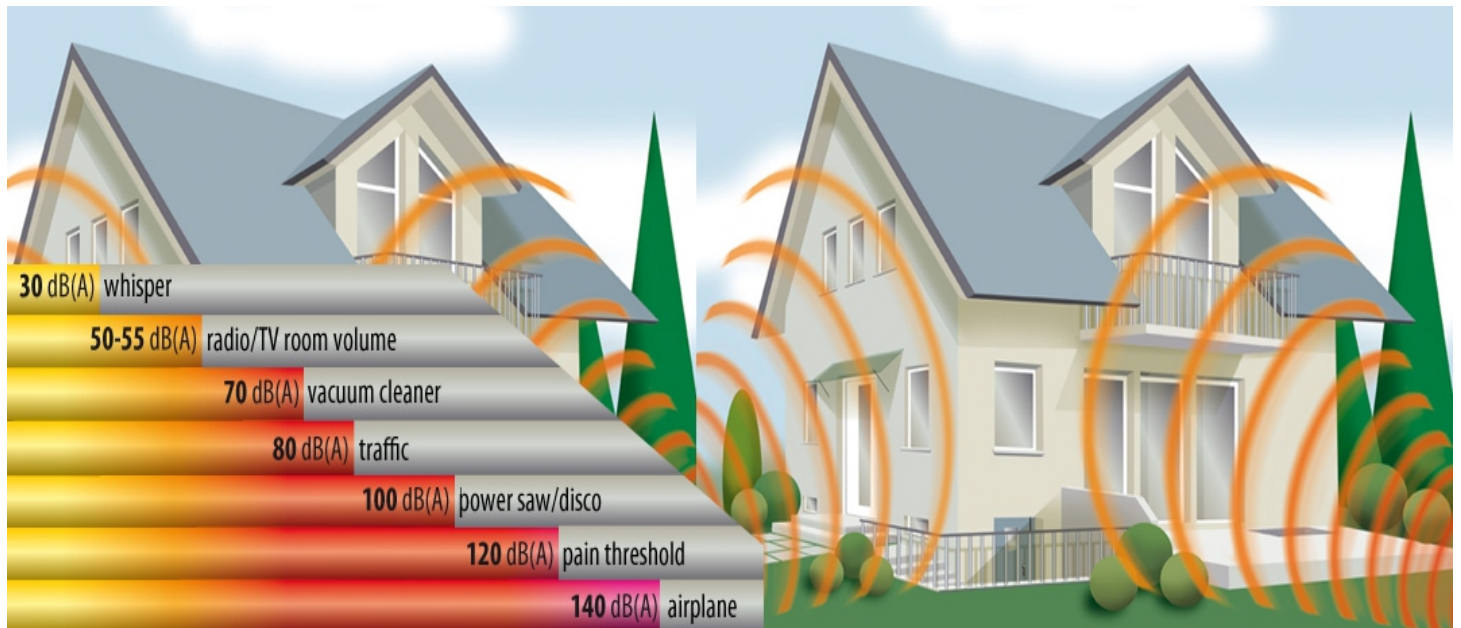


nanösound

nanösound
Ses Yalıtım Sistemleri

nanötek
quality protect



HOMASOTE

Heradesign
Acoustic Ceilings

PONGS
TECHNICAL TEXTILES

sto

TECSOUND
texsa

KRAIBURG

SOPREMA

dBcover
acoustic protection solutions

SES : İnsan kulağında işitsel duyulanma yaratan maddesel ortam titreşimlerine ses denir.

Sesin inceliği, kalınlığı sesi çıkaran nesnenin titreşim hızı ile ilgilidir. Hızlı titreşim yapan nesnelere ince (tiz) sesler, yavaş titreşim yapan nesnelere kalın (bas) sesler çıkarılır.

Doğuşlarına göre sesler ikiye ayrılır :

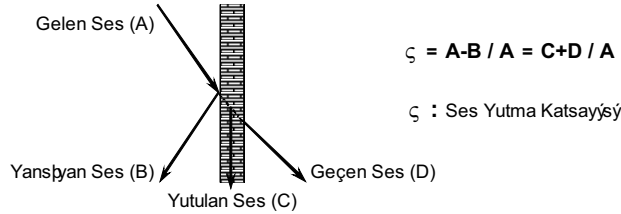
- 1- Havada doğan sesler
- 2- Katıda doğan sesler

Sesin havada mı yoksa katıda mı doğduğunu bilmek çok önemlidir. Çünkü bu iki çeşit sesin yayılma kuralları ve alınacak önlemler çok farklıdır.

Desibel (dB):

- Duyulup ölçülebilen en küçük ses birimidir. dB (A) notasyonu insanlar tarafından duyulabilen ses birimini temsil eder. 6 dB'lik bir düşüş ,kulağa gelen basınçta %50 oranında azalmaya neden olur. Bunun nedeni ;ses basıncının lineer değil, logaritmik olarak ölçülmesidir.
- **FREKANS** : Saniyedeki titreşim sayısına frekans denir. Birimi hertz (Hz)'dir. 1 saniyedeki 1 titreşim birimi 1 Hz'dir.Frekans yükseldikçe ses incelir.
- Örneğin oyun oynayan çocukların sesi yüksek frekans,bina içindeki titreşim düşük frekansa ait seslerdir.
- İnsanların konuşmaları 20-16000 Hz arasında değişir.
- Kompresör 250 Hz, erkek sesi 500-1000 Hz, kadın sesi 2000-4000 Hz arasında değişir.

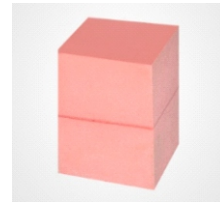
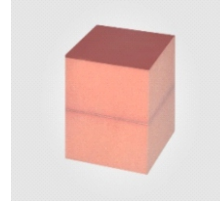
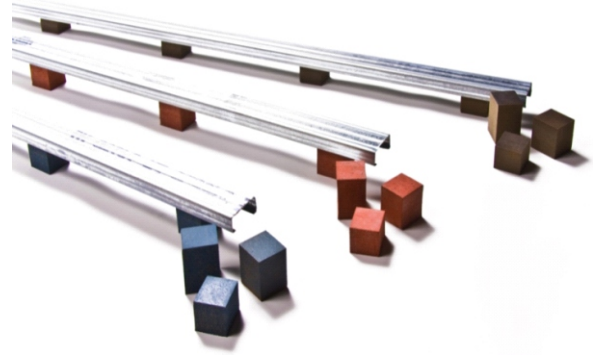
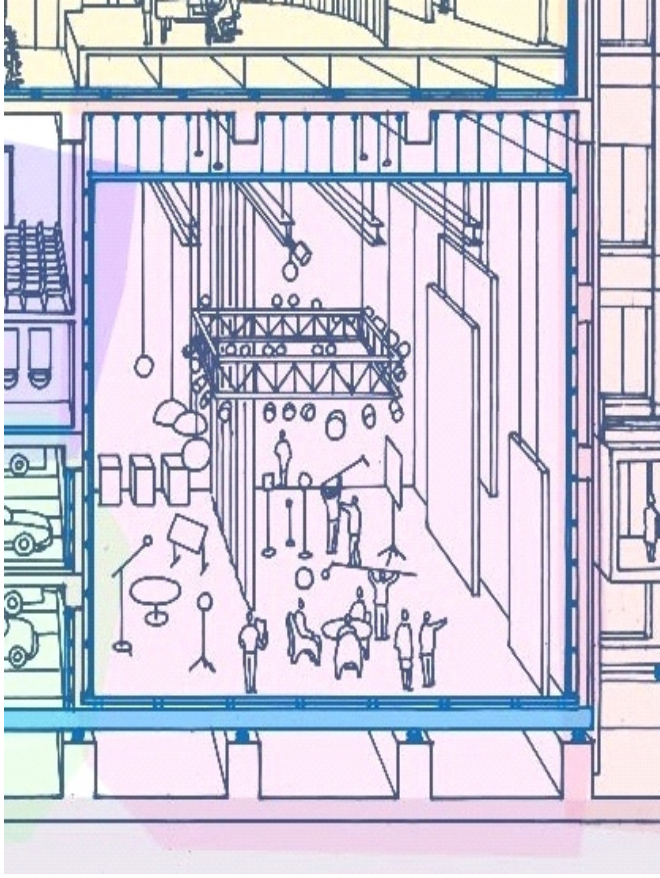
SES YUTMA KATSAYISI : Ses bir engelle karşılaştığında bir bölümü engelden yansır, bir bölümü engel tarafından yutulur, kalan bölümü de engelin diğer tarafına geçer.



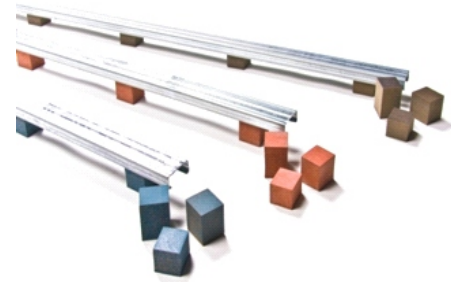
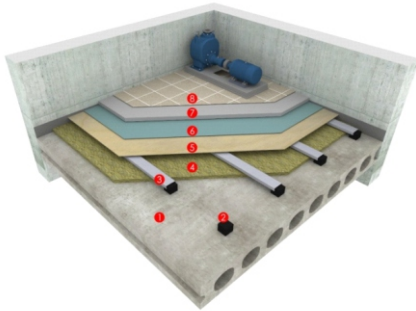
• **SES KONTROLÜ**

- Ses kontrolü 2 amaçla yapılır :
- **1- Gürültü Kontrolü** : Ses iletimini engellemek amacıyla.
- **2- Akustik Düzenleme** : Ortamın reverberasyon (yankılanma) süresi ve yankılanma özelliklerini düzenlemek amacıyla.
- **GÜRÜLTÜ** : İstenmeyen, rahatsız edici ses olarak tanımlanabilir.
- Gürültü kontrolü 3 şekilde yapılabilir :
- 1- Kaynakta
- 2- Kaynak ve alıcı arasında
- 3- Alıcıda

VİBRA SERİSİ Yüzer Döşeme Sistemleri

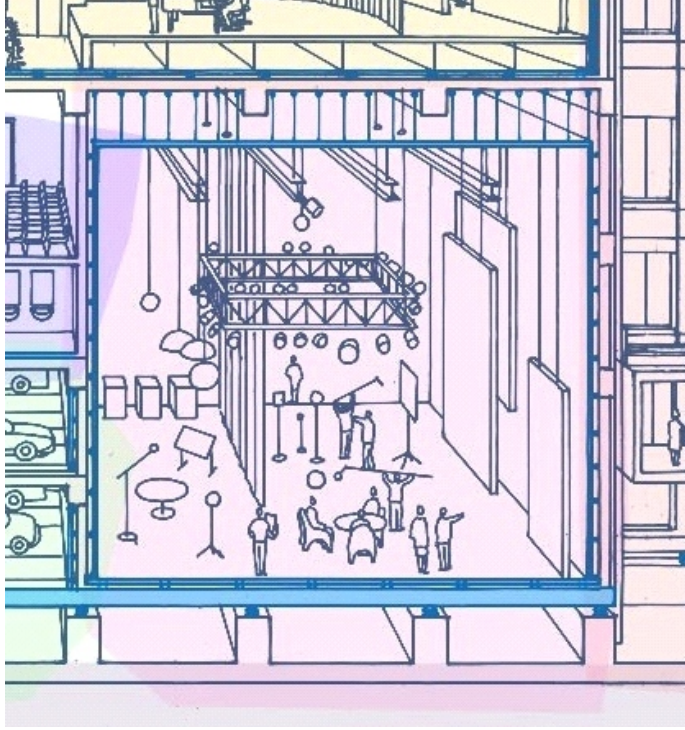


VİBRA

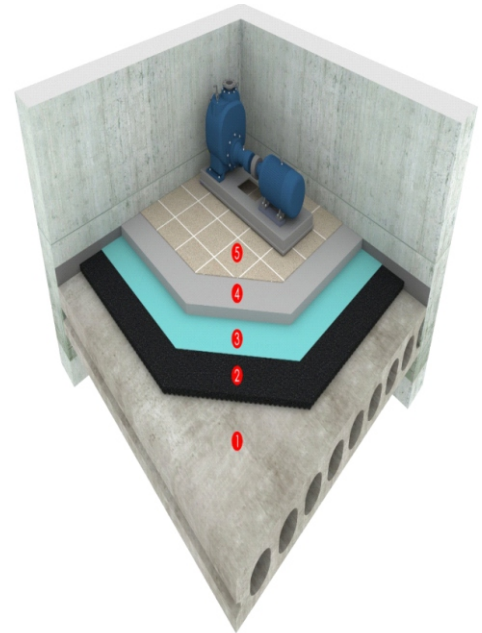
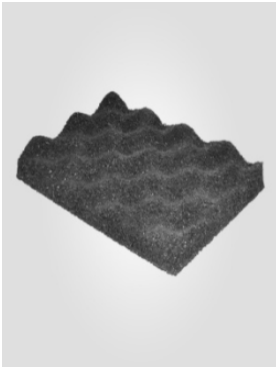


- MEVCUT DÖŞEME / EXISTING FLOOR
- DAMTEC VİBRA SERIES
- GALVANİZ AKUSTİK PROFİL / GALVANIZED ACOUSTIC PROFILE
- TAŞYÜNÜ / ROCKWOOL
- PLYWOOD
- PE FİLM
- DONATILI ŞAP / REINFORCED SCREED
- BİTİŞ MALZEMESİ / FINISHED MATERIAL

DAMTEC MATT Yüzer Döşeme Matları



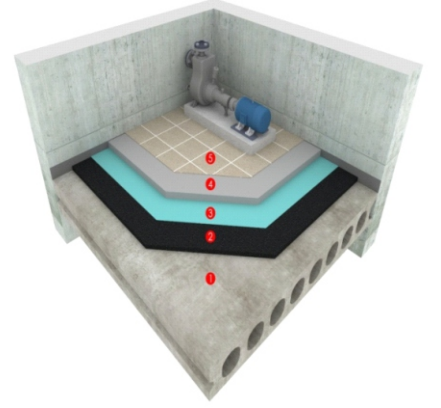
DAMTEC SERIES



- MEVCUT DÖŞEME / EXISTING FLOOR
- DAMTEC 3D SERIES
- PE FİLM
- 4-ŞAP / SCREED
- BİTİŞ MALZEMESİ / FINISHING MATERIAL

DAMTEC ŞAP ALTI

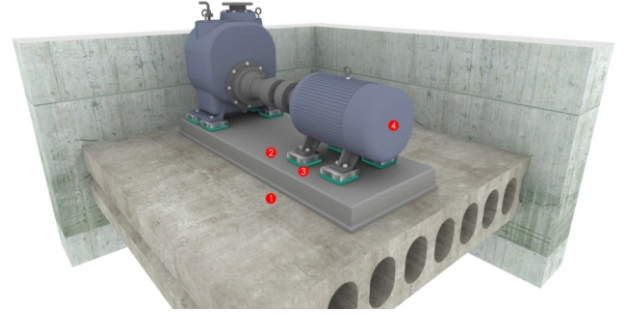
DAMTEC SERIES



- MEVCUT DÖŞEME / EXISTING FLOOR
- DAMTEC MATT SERIES
- PE FİLM
- DONATILI ŞAP / REINFORCED SCREED
- BİTİŞ MALZEMESİ / FINISHING MATERIAL

DAMTEC MATT
Şap Altı

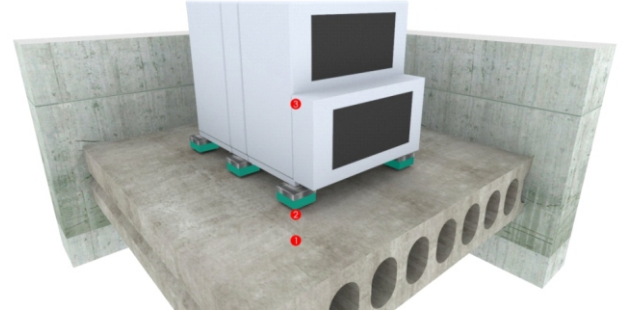
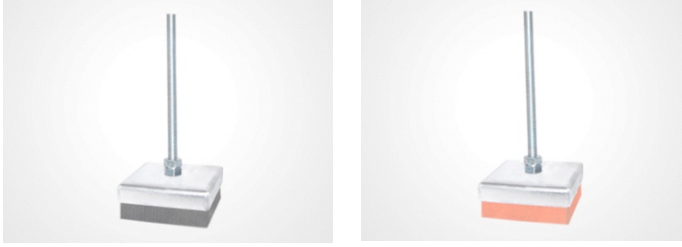
IPT SERİSİ TAŞIYICILAR



- MEVCUT DÖŞEME / EXISTING FLOOR
- KAİDE / BASE
- IPT 25 İZO PU TAŞIYICI
- MEKANİK CİHAZ / MECHANICAL EQUIPMENT

IPT25 SERIES

IPT SERIES

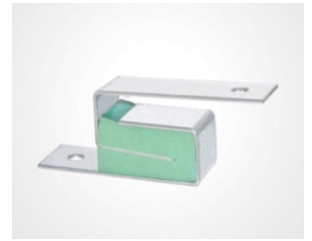
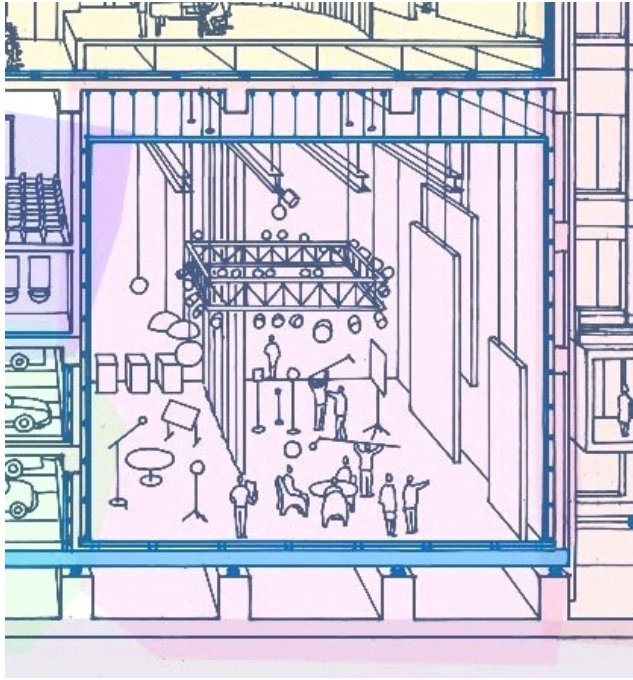


- MEVCUT DÖŞEME / EXISTING FLOOR
- KAİDE / BASE
- IPT 50 İZO PU TAŞIYICI
- MEKANİK CİHAZ / MECHANICAL EQUIPMENT

IPT50 SERIES

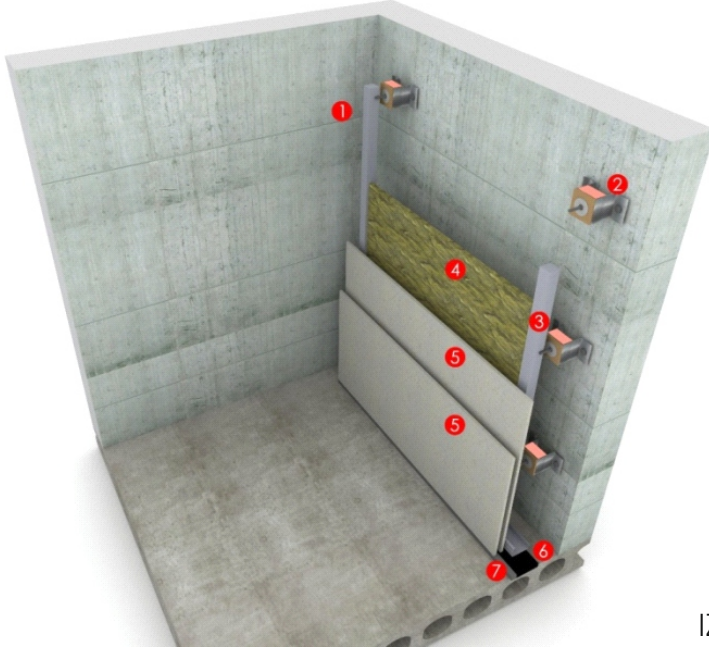
IZODT SERİSİ

Titreşim Sönümleyici Duvar Elemanları



IZODT SERİSİ

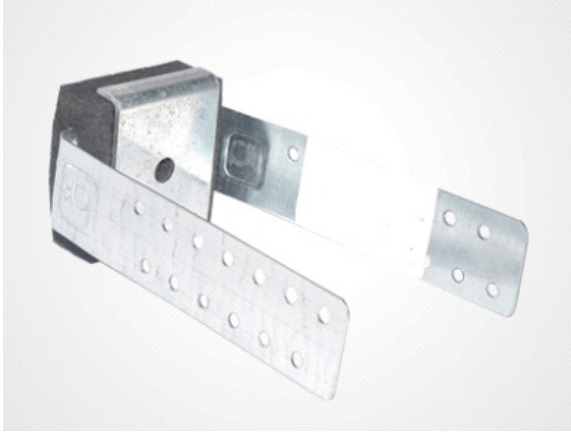
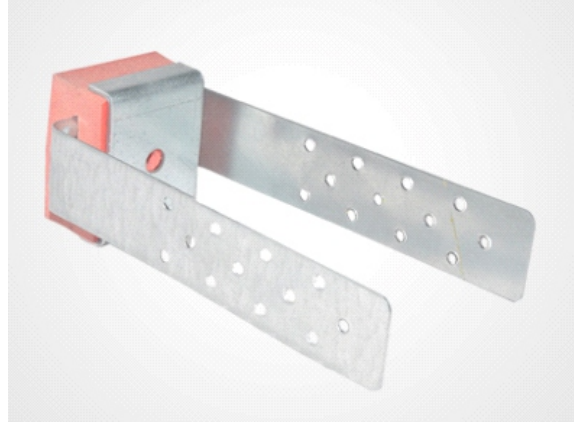
Ürün Kodu	Renk	Frekans Aralığı (Hz)	Çökme Aralığı (mm)	Yük Aralığı (kg)
IZODT02-30	yeşil	14 - 9	1 - 6	10 - 20
IZODT02-40	bordo	15 - 10	3 - 5	18 - 37
IZODTT02-51	pembe	15 - 11	1 - 4	37 - 75
IZODTT02-68	gri	13 - 11	2 - 4	100 - 150



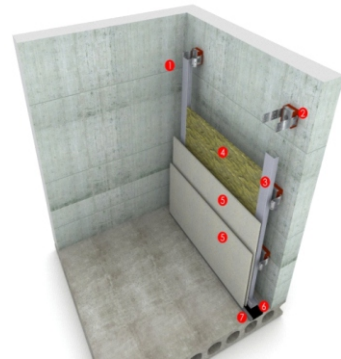
IZODT-02

- MEVCUT DUVAR / EXISTING WALL
- İZODT SERİSİ
- KUTU PROFİL KONSTRUKSİYON / HOLLOW SECTION CONSTRUCTION
- TAŞYÜNÜ / ROCKWOOL
- ALÇI PLAKA / GYPSUM BOARD
- STRİP
- AKUSTİK MASTİK / ACOUSTIC SELEANT

IZOAGRAF SERİSİ Titreşim Sönümleyici Duvar Montaj Elemanı



Ürün Kodu Product Code	Renk Colour	Frekans Aralığı Frequencies Load Hz	Çökme Aralığı Deflection mm	Yük Aralığı Load kg
IZOAGRAF02-30	Yeşil Green	14 - 9	1 - 6	10 - 20
IZOAGRAF02-40	Bordo Claret Red	15 - 10	3 - 5	18 - 37
IZOAGRAF02-51	Pembe Pink	15 - 11	1 - 4	37 - 75
IZOAGRAF02-68	Gri Grey	13 - 11	2 - 4	100 - 150

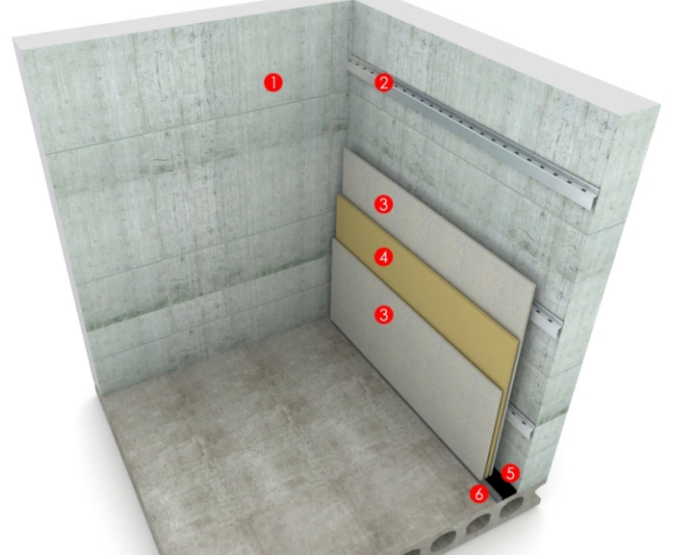


- MEVCUT DUVAR / EXISTING WALL
- IZOAGRAF SERİSİ
- GALVANİZ PROFİL / GALVANIZED PROFILE
- TAŞYÜNÜ / ROCKWOOL
- ALÇI PLAKA / GYPSUM BOARD
- STRİP
- AKUSTİK MASTİK / ACOUSTIC SELEANT

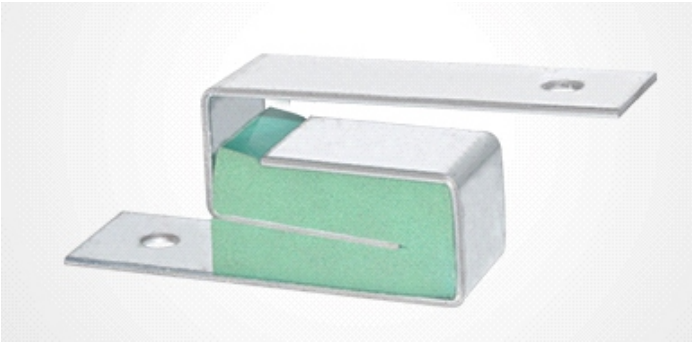
RESILIENT CHANNELS



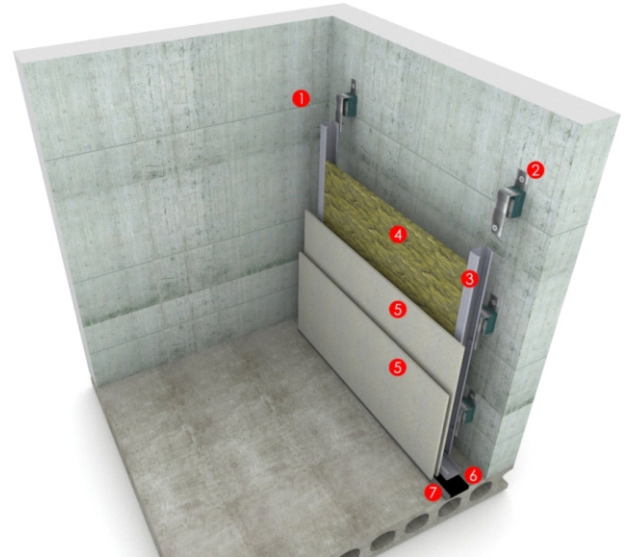
- MEVCUT DUVAR / EXISTING WALL
- RC 01
- ALÇI PLAKA / GYPSUM BOARD
- TECSOUND BARIYER
- STRİP
- AKUSTİK MASTİK / ACOUSTIC SEALANT



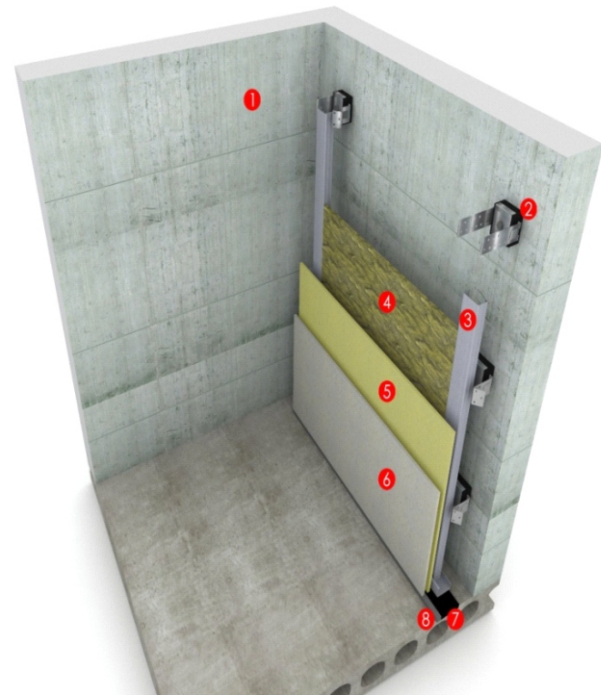
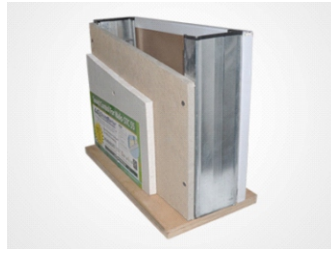
IZODT 04



- MEVCUT DUVAR / EXISTING WALL
- IZODT 04
- PROFİL KONSTRÜKSİYON / CONSTRUCTION
- TAŞ YÜNÜ / ROCKWOOL
- ALÇI PLAKA / GYPSUM BOARD
- STRİP
- AKUSTİK MASTİK / ACOUSTIC SEALANT

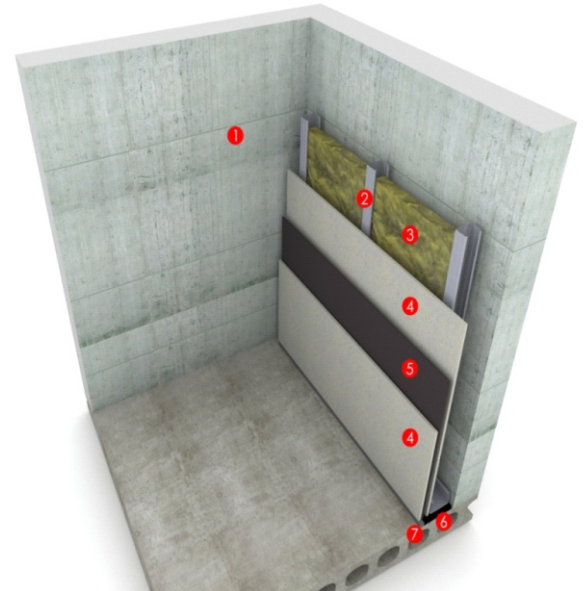
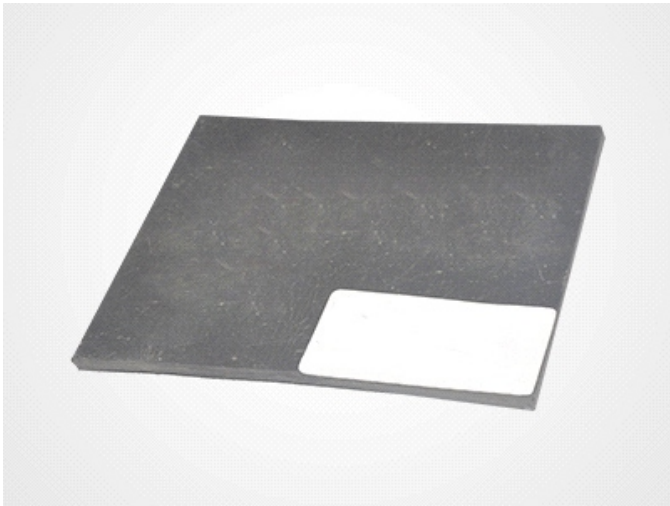


HAMASOTE SERIES



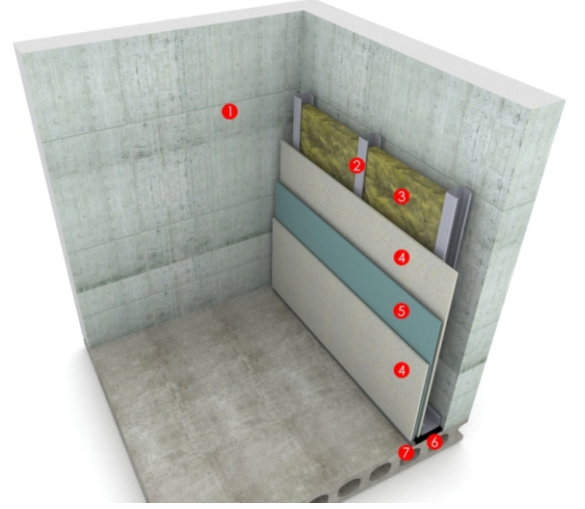
- MEVCUT DUVAR / EXISTING WALL
- TİTREŞİM SÖNÜMLEYİCİ DUVAR ELEMANI / ANTI VIBRATION WALL HANGER
- GALVANİZ PROFİL / GALVANIZED PROFILE
- TAŞYÜNÜ / ROCKWOOL
- HOMASOTE BARRIER
- ALÇI PLAKA / GYPSUM BOARD
- STRİP
- AKUSTİK MASTİK / ACOUSTIC SEALANT

HB SERIES BARRIER



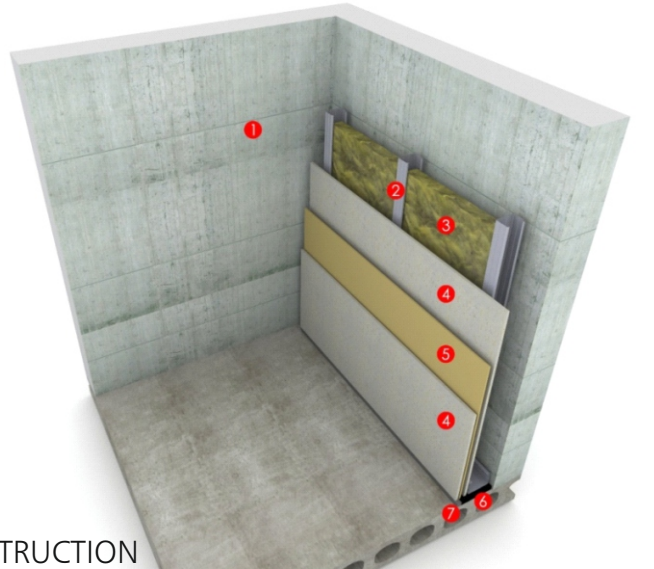
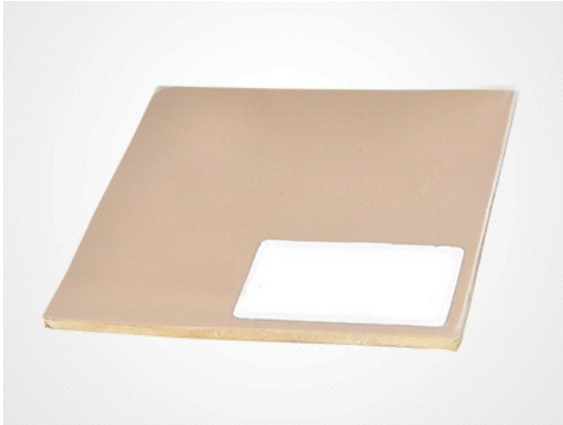
- MEVCUT DUVAR / EXISTING WALL
- TAŞIYICI KONSTRUKSIYON / BEARING CONSTRUCTION
- TAŞYÜNÜ / ROCKWOOL
- ALÇI PLAKA / GYPSUM BOARD
- HB SERIES
- STRİP
- AKUSTİK MASTİK / ACOUSTIC SEALANT

SOPREMA STICSON



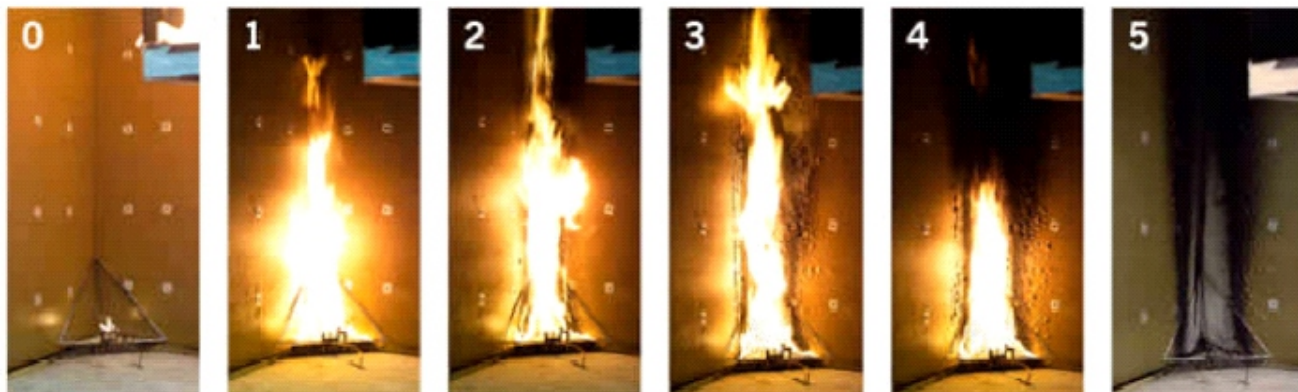
- MEVCUT DUVAR / EXISTING WALL
- TAŞIYICI KONSTRUKSİYON / BEARING CONSTRUCTION
- TAŞYÜNÜ / ROCKWOOL
- ALÇI PLAKA / GYPSUM BOARD
- SOPREMA STICSON BARIYER
- STRİP
- AKUSTİK MASTİK / ACOUSTIC SEALANT

TECSOUND



- MEVCUT DUVAR / EXISTING WALL
- TAŞIYICI KONSTRUKSİYON / BEARING CONSTRUCTION
- TAŞYÜNÜ / ROCKWOOL
- ALÇI PLAKA / GYPSUM BOARD
- TECSOUND BARIYER
- STRİP
- AKUSTİK MASTİK / ACOUSTIC SEALANT

Fire classification: Euroclass B s2 d0.



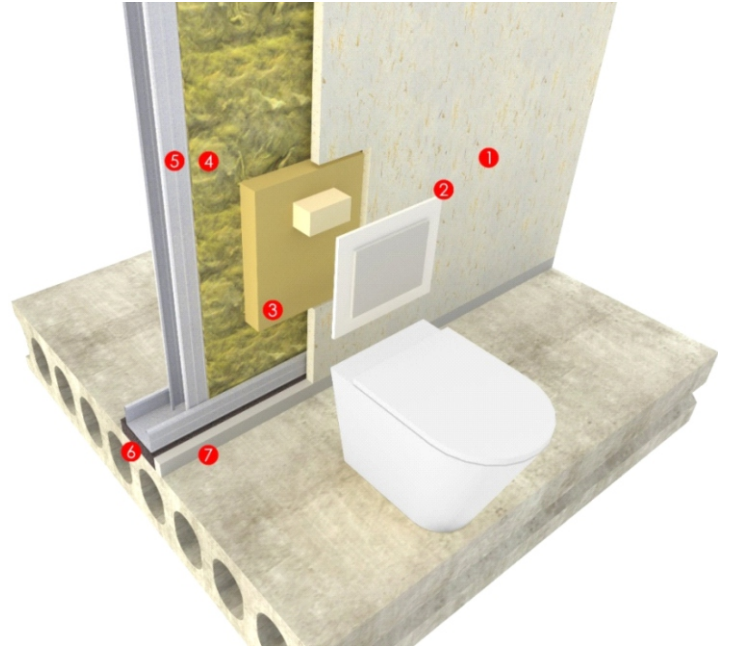
TECSOUND BARRIER



TECSOUND FT55 AL

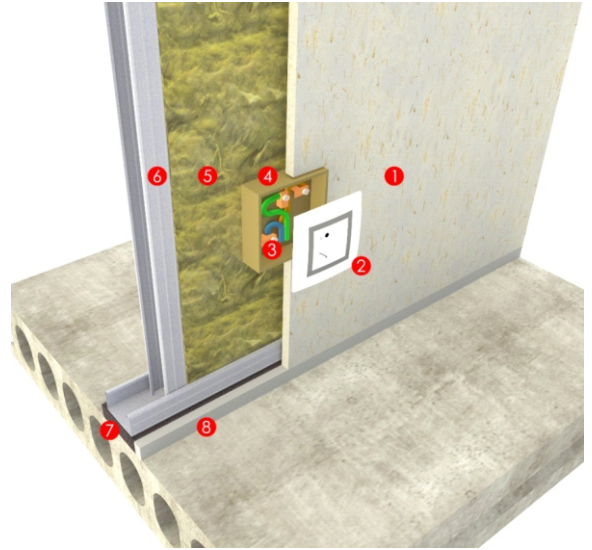
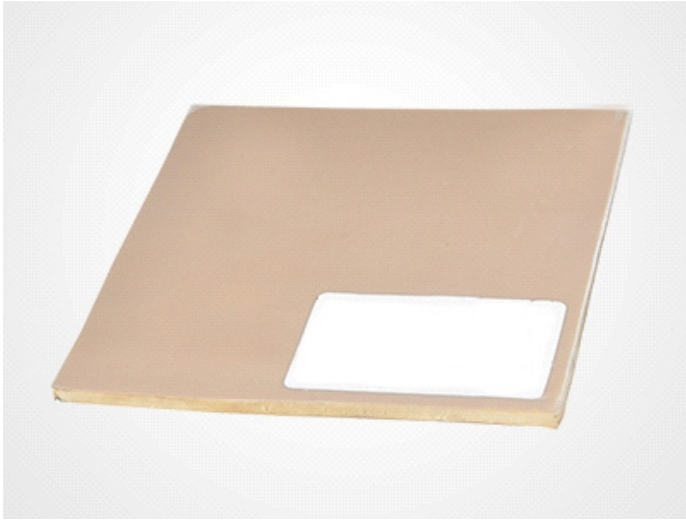


1. Tecsound FT55 AL
2. Drainpipe
3. Plastic fixing
4. Aluminium tape



- ALÇI PLAKA / GYPSUM BOARD
- REZERVUAR BUTONU / RESERVOIR BUTTON
- REZERVUAR İZOLASYON PLAKASI / RESERVOIR ISOLATION PAD
- TAŞYÜNÜ / ROCKWOOL
- TAŞIYICI KONSTRUKSİYON / CONSTRUCTION STRİP
- AKUSTİK MASTİK / ACOUSTIC SEALANT

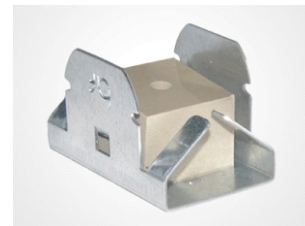
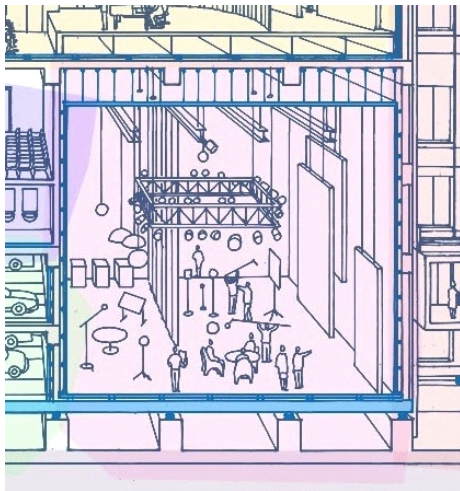
TECSOUND



- ALÇI PLAKA / GYPSUM BOARD
- ELEKTİRİK SOKETİ / ELECTIRICAL SOCET
- PRİZ/ANAHTAR KASASI / SWITCH BOX
- TECSOUND PUTTY PAD
- TAŞYÜNÜ / ROCKWOOL
- TAŞIYICI KONSTRUKSİYON / CONSTRUCTION
- STRİP
- AKUSTİK MASTİK / ACOUSTIC SEALANT

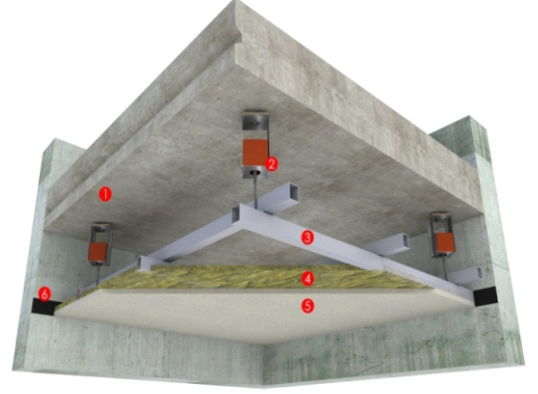
ITT SERIES

Titreşim Sönümleyici Tavan Askı Elemanları



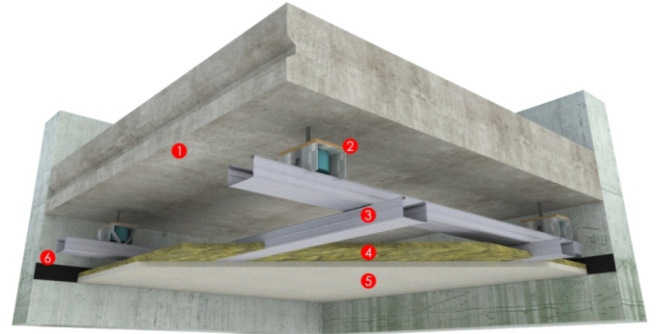
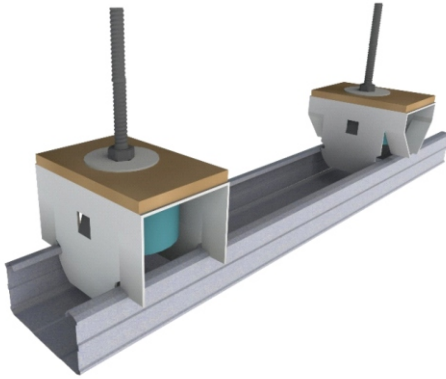
ITT SERIES

Ürün Kodu Product Code	Renk Colour	Frekans Aralığı Frequencies Load Hz	Çökme Aralığı Deflection mm	Yük Aralığı Load kg
ITT02-30	Yeşil Green	13 - 6	2 - 12	10 - 20
ITT02-40	Bordo Claret Red	14 - 7	3 - 11	18 - 37
ITT02-51	Pembe Pink	13 - 7	3 - 9	37 - 75
ITT02-68	Gri Grey	16 - 7	5 - 9	100 - 150



- MEVCUT TAVAN / EXISTING CEILING
- ITT SERIES
- KUTU PROFİL KONSTRUKSİYON / HOLLOW SECTION CONSTRUCTION
- TAŞYÜNÜ / ROCKWOOL
- ALÇI PLAKA / GYPSUM BOARD
- STRİP

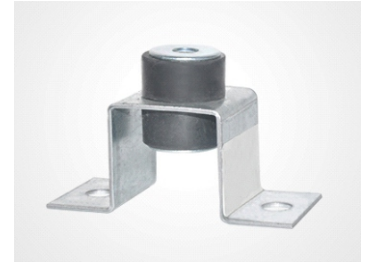
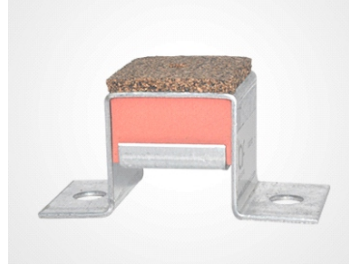
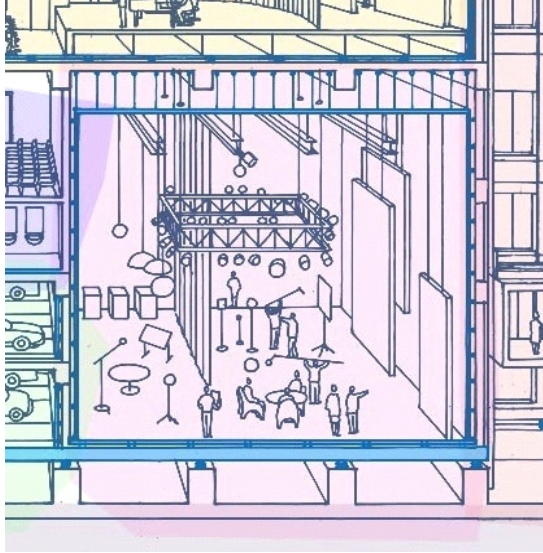
ITT 03 SERIES



- MEVCUT TAVAN/EXISTING CEILING
- ITT SERIES
- GALVANİZ PROFİL KONSTRUKSİYON / GALVANİZ PROFILE
- TAŞYÜNÜ / ROCKWOOL
- ALÇI PLAKA / GYPSUM BOARD
- STRİP

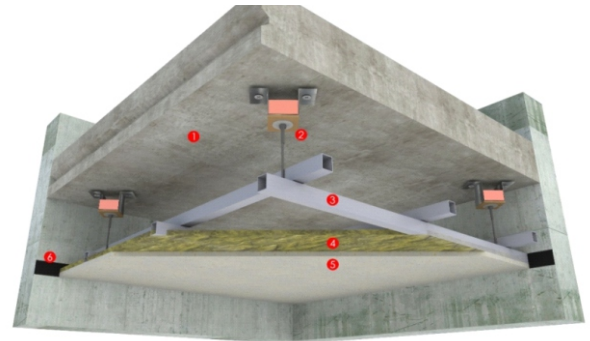
IZODT SERIES

Titreşim Sönümleyici Tavan Askı Elemanları



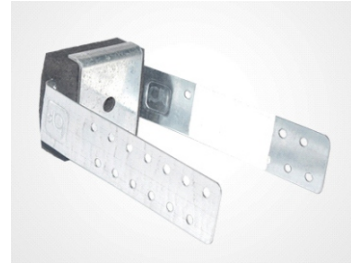
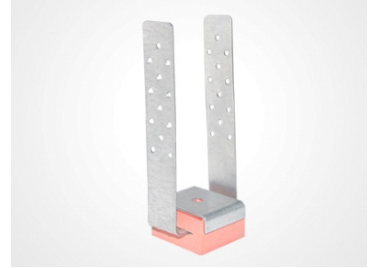
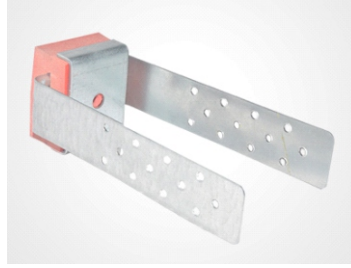
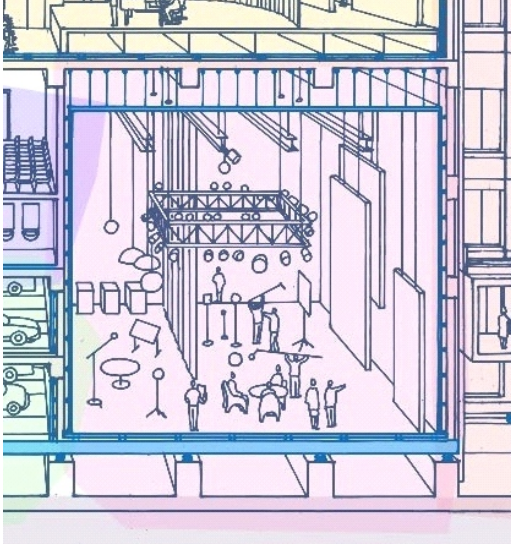
- MEVCUT TAVAN / EXISTING CEILING
- IZODT SERIES
- KUTU PROFİL KONSTRUKSIYON / HOLLOW SECTION CONSTRUCTION
- TAŞYÜNÜ / ROCKWOOL
- ALÇI PLAKA / GYPSUM BOARD
- STRİP

Ürün Kodu	Renk	Frekans Aralığı (Hz)	Çökme Aralığı (mm)	Yük Aralığı (kg)
IZODT02-30	yeşil	14 - 9	1 - 6	10 - 20
IZODT02-40	bordo	15 - 10	3 - 5	18 - 37
IZODTT02-51	pembe	15 - 11	1 - 4	37 - 75
IZODTT02-68	gri	13 - 11	2 - 4	100 - 150



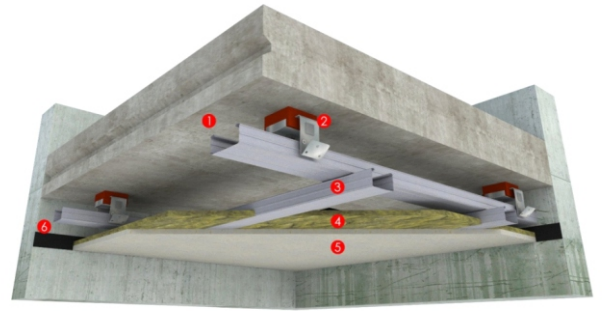
IZOAGRAF SERIES

Titreşim Sönümleyici Tavan Askı Elemanları

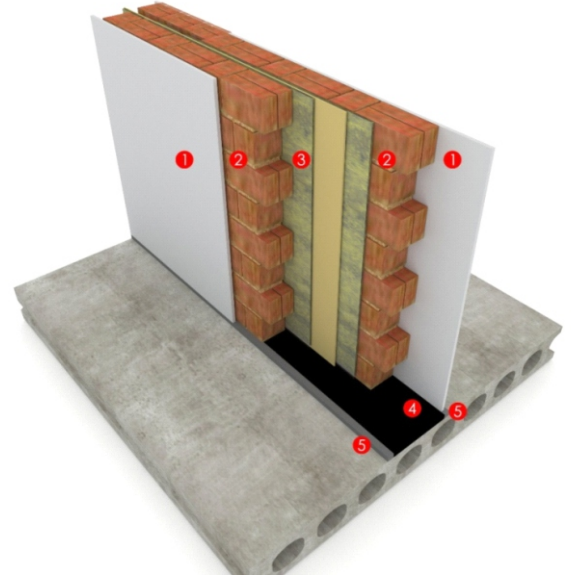


- MEVCUT TAVAN / EXISTING CEILING
- İZOAGRAF SERIES
- GALVANİZ PROFİL / GALVANIZED PROFILE
- TAŞYÜNÜ / ROCKWOOL
- ALÇI PLAKA / GYPSUM BOARD
- STRİP

Ürün Kodu Product Code	Renk Colour	Frekans Aralığı Frequencies Load Hz	Çökme Aralığı Deflection mm	Yük Aralığı Load kg
IZOAGRAF02-30	Yeşil Green	14 - 9	1 - 6	10 - 20
IZOAGRAF02-40	Bordo Claret Red	15 - 10	3 - 5	18 - 37
IZOAGRAF02-51	Pembe Pink	15 - 11	1 - 4	37 - 75
IZOAGRAF02-68	Gri Grey	13 - 11	2 - 4	100 - 150

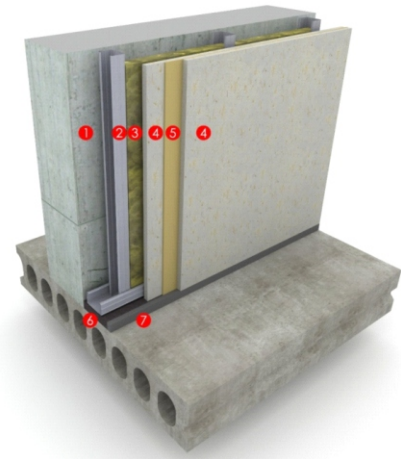


TECSOUND BARRIERS



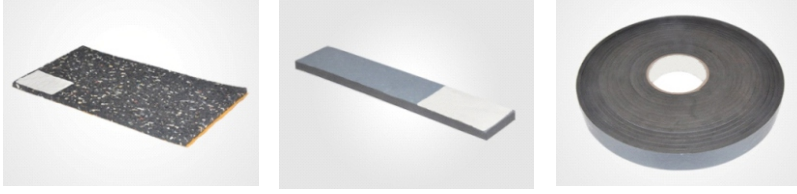
- ALÇI PLAKA / GYPSUM BOARD
- KAGIR DUVAR / MASONRY WALL
- TECSOUND FT 55 AL
- STRİP
- AKUSTİK MASTİK / ACOUSTIC SEALANT

STRİP

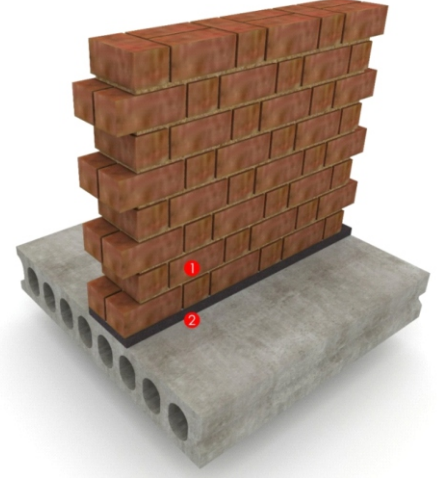


- MEVCUT DUVAR / EXISTING WALL
- TAŞIYICI KONSTRUKSİYON / BEARING CONSTRUCTION
- TAŞYÜNÜ / ROCKWOOL
- ALÇI PLAKA / GYPSUM BOARD
- TECSOUND BARIYER
- STRİP
- AKUSTİK MASTİK / ACOUSTIC SEALANT

STRIP

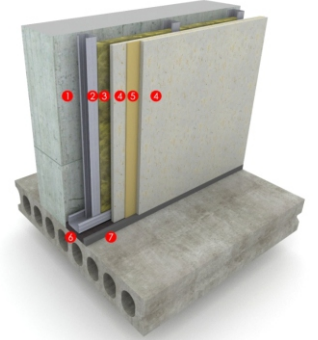


- KAGIR DUVAR / MASONRY WALL
- STRİP



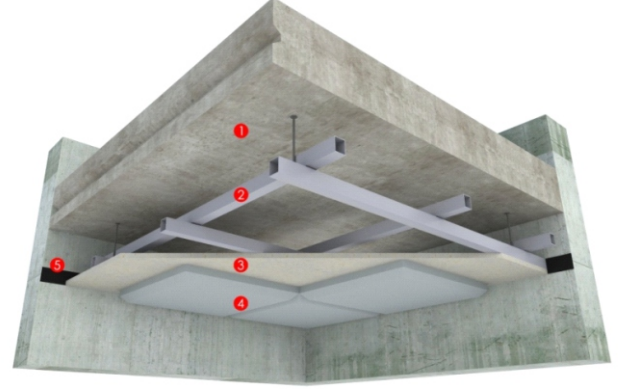
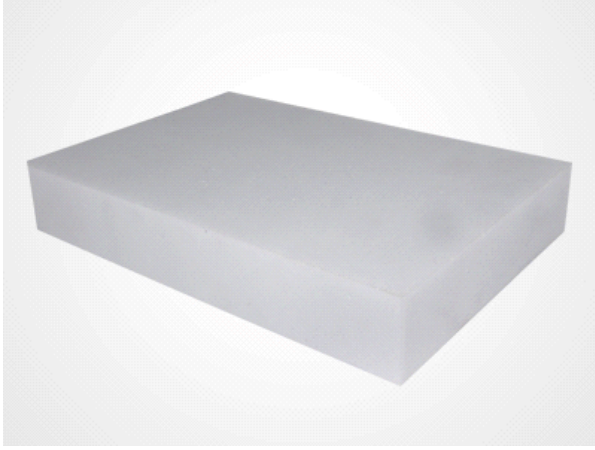
AKUSTİK MASTİK

orjinali eklenecek



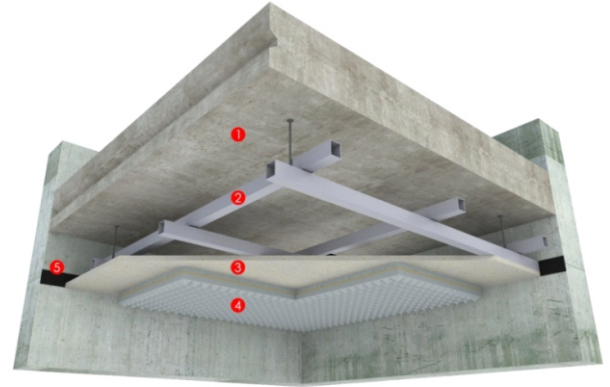
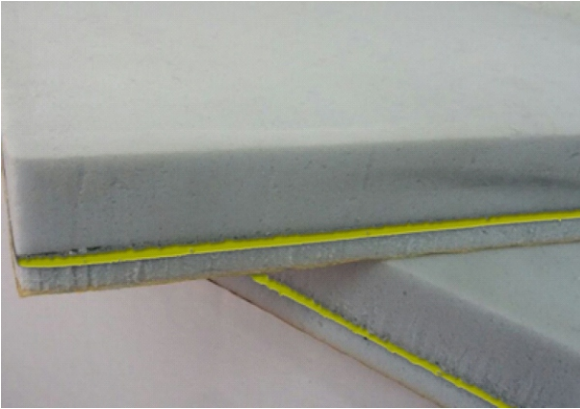
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- TAŞIYICI KONSTRUKSIYON / BEARING CONSTRUCTION
- TAŞYÜNÜ / ROCKWOOL
- ALÇI PLAKA / GYPSUM BOARD
- TECSOUND BARIYER
- STRİP
- AKUSTİK MASTİK / ACOUSTIC SEALANT

BASOTECT



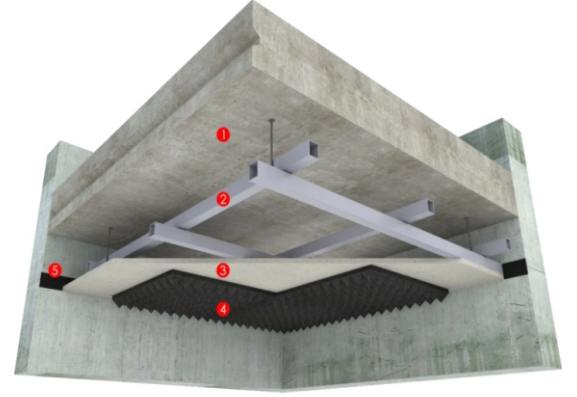
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- TAŞIYICI KONSTRUKSİYON / BEARING CONSTRUCTION
- ALÇI PLAKA / GYPSUM BOARD
- BASOTECT
- STRİP

BARİYERLİ BASOTECT



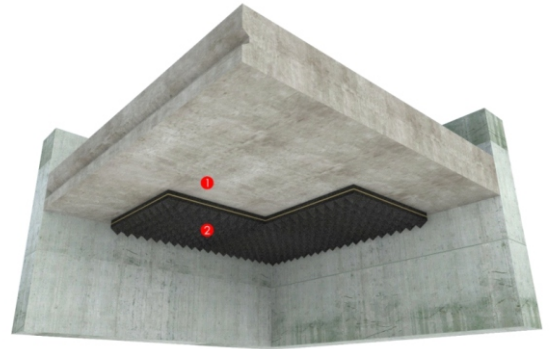
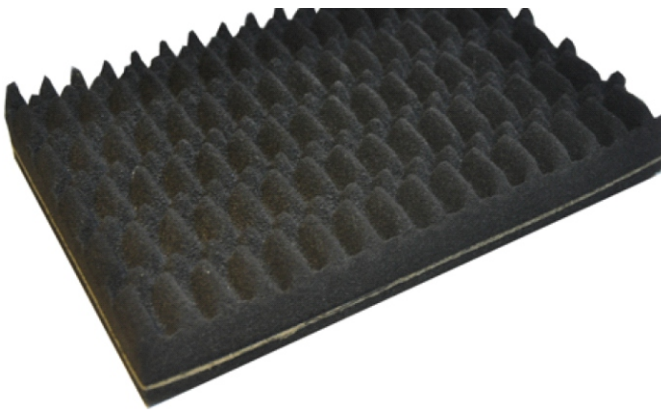
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- TAŞIYICI KONSTRUKSİYON / BEARING CONSTRUCTION
- ALÇI PLAKA / GYPSUM BOARD
- BARİYERLİ BASOTECT
- STRİP

PU E FOAM



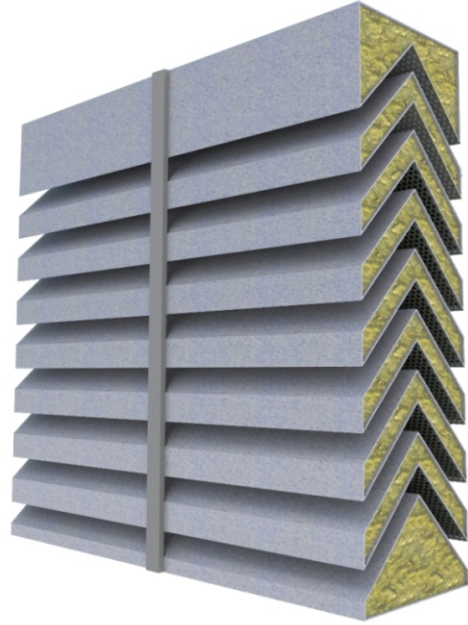
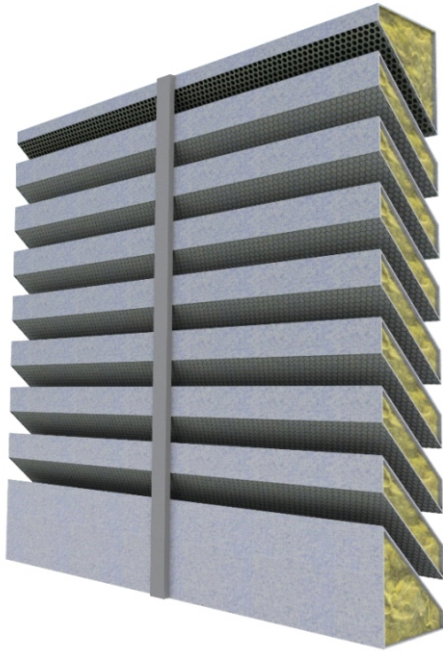
- MEVCUT TAVAN / EXISTING CEILING
- TAŞIYICI KONSTRUKSİYON / BEARING CONSTRUCTION
- ALÇI PLAKA / GYPSUM BOARD
- PU E FOAM
- STRİP

BARİYERLİ PU E FOAM



- MEVCUT TAVAN / EXISTING CEILING
- BARİYERLİ PU E FOAM

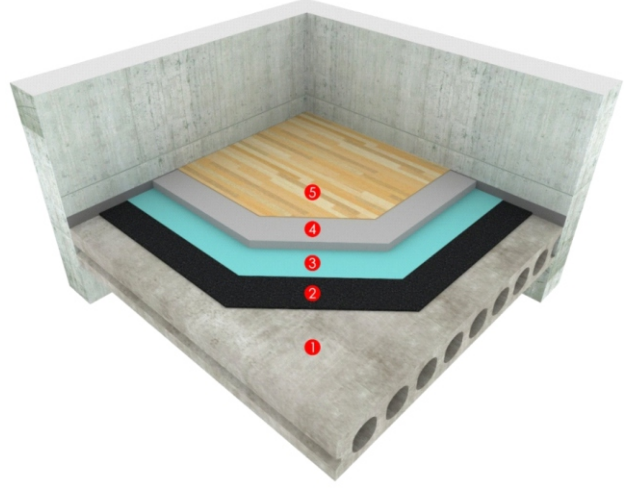
AKUSTİK MENFEZ



UNDERSCREED SERIES



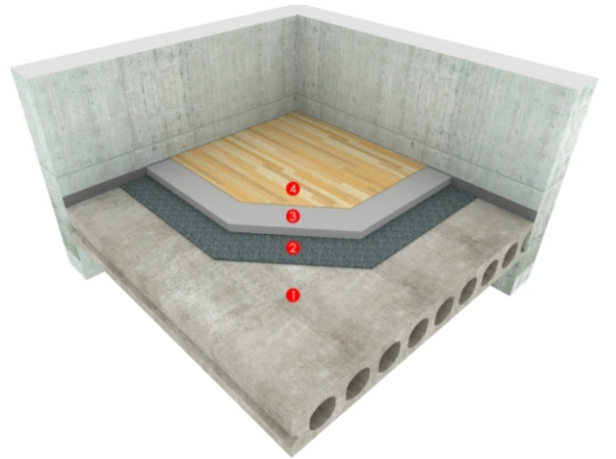
- MEVCUT DÖŞEME / EXISTING FLOOR
- DAMTEC MULTI
- PE FİLM
- ŞAP / SCREED
- BİTİŞ MALZEMESİ / FINISHING MATERIAL



SOPREMA VELAPHONE FIBRE SERIES

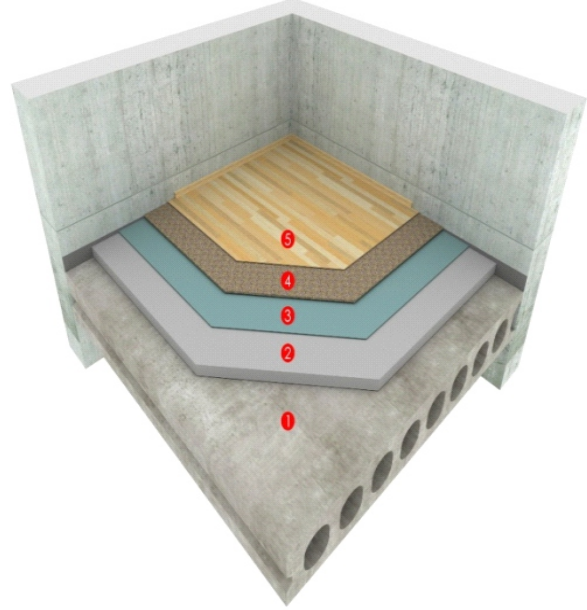


- MEVCUT DÖŞEME / EXISTING FLOOR
- SOPREMA VELAPHONE FIBRE-22
- ŞAP / SCREED
- BİTİŞ MALZEMESİ / FINISHING MATERIAL



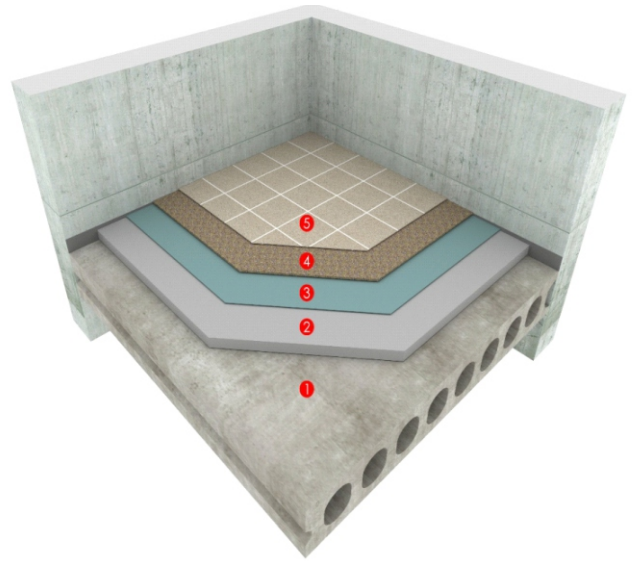
Underscreeds

DAMTEC SERIES



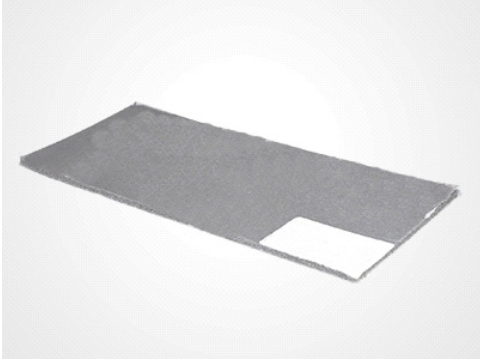
- MEVCUT DÖŞEME / EXISTING FLOOR
- ŞAP / SCREED
- PE FİLM
- DAMTEC STANDART
- PARKE / PARQUET

DAMTEC STANDART

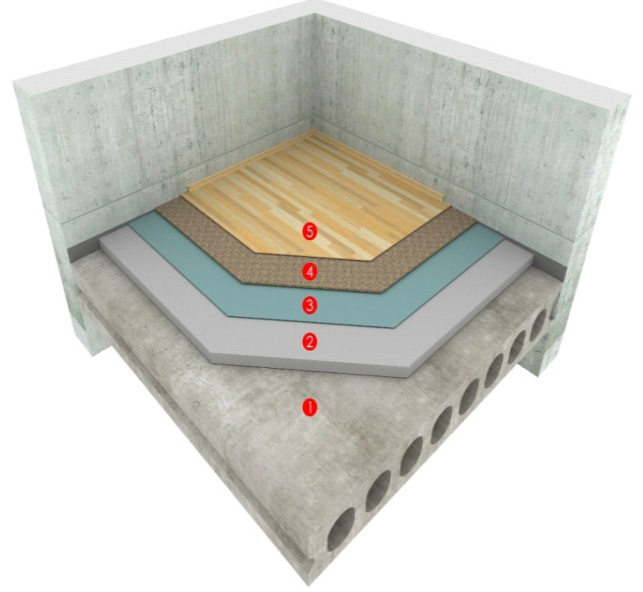


- MEVCUT DÖŞEME / EXISTING FLOOR
- ŞAP / SCREED
- PE FİLM
- DAMTEC STANDART
- SERAMİK / CERAMIC

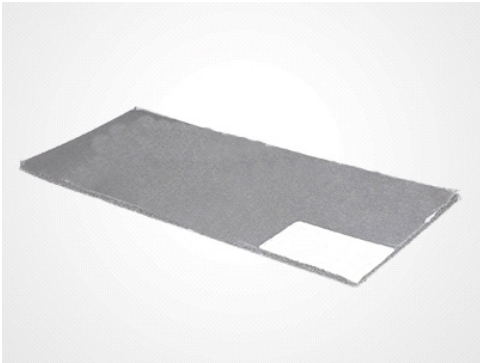
DB COVER SERIES



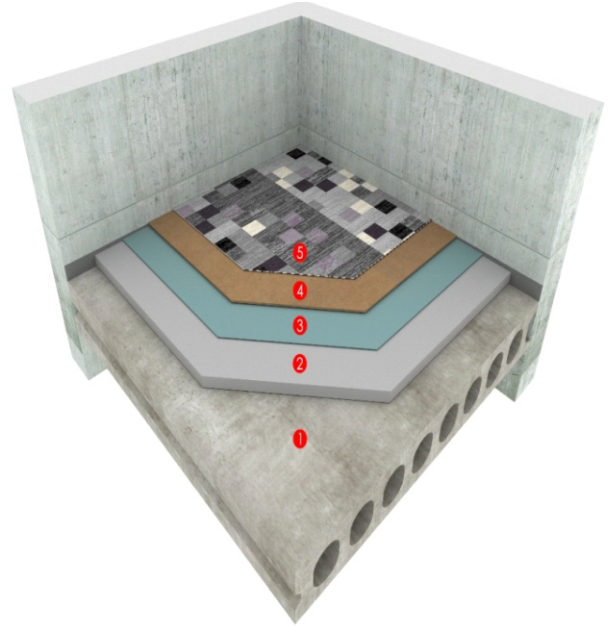
- MEVCUT DÖŞEME / EXISTING FLOOR
- ŞAP / SCREED
- PE FİLM
- DB COVER HD3F ZEMİN
- PARKE / PARQUET



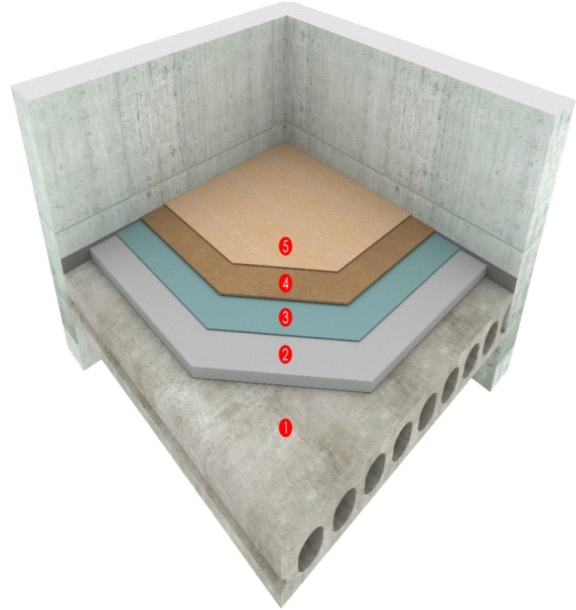
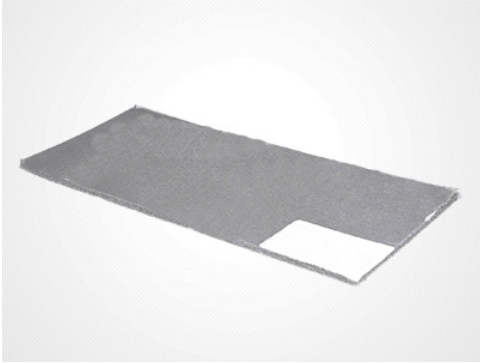
DB COVER SERIES



- MEVCUT DÖŞEME / EXISTING FLOOR
- ŞAP / SCREED
- PE FİLM
- DB COVER CNT5 HALI ALTI
- HALI / CARPET



DBCORVER SERIES

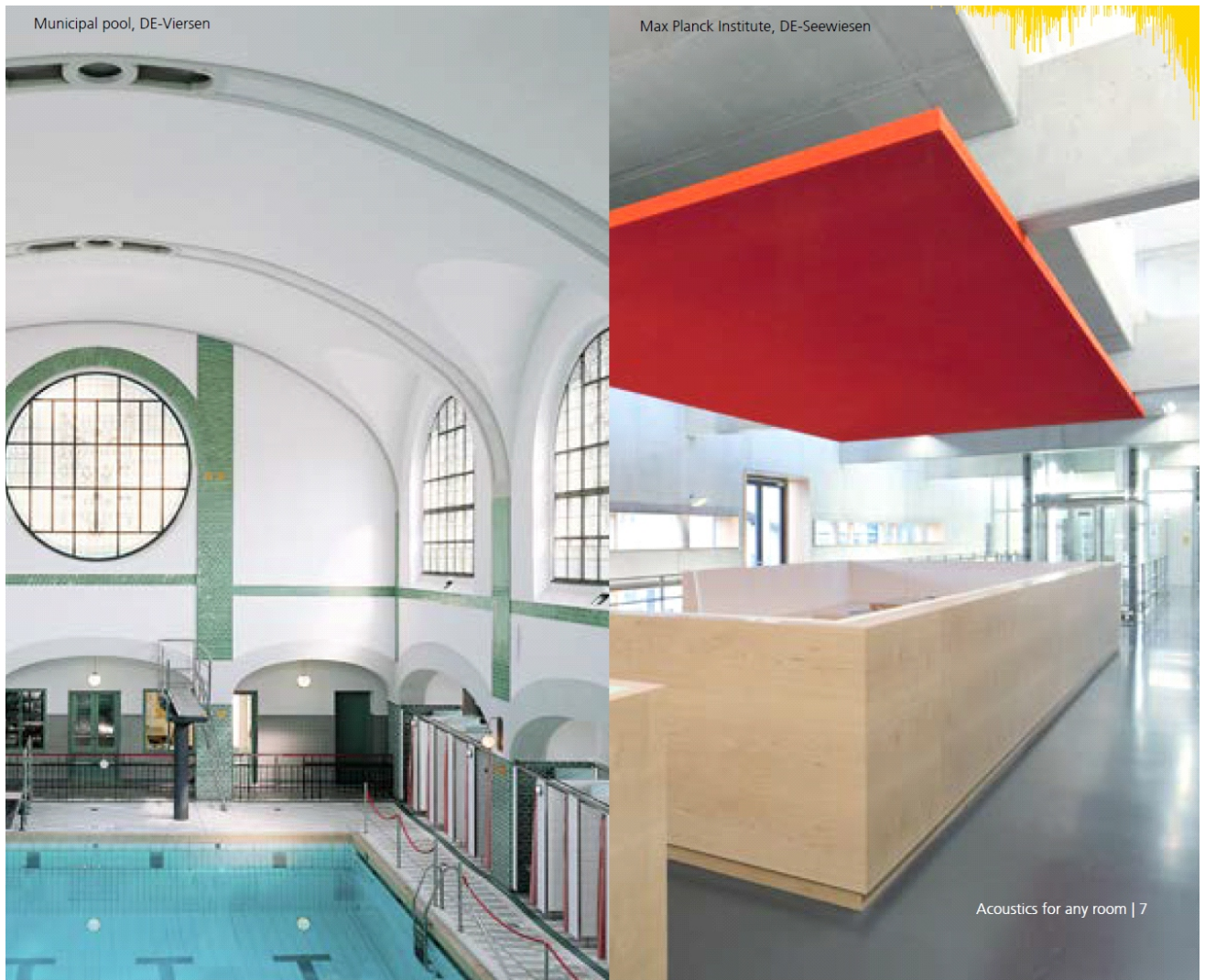


- MEVCUT DÖŞEME / EXISTING FLOOR
- ŞAP / SCREED
- PE FİLM
- DB COVER HD1.5 GPR VİNİL PVC
- VİNİL PVC / VINYL PVC

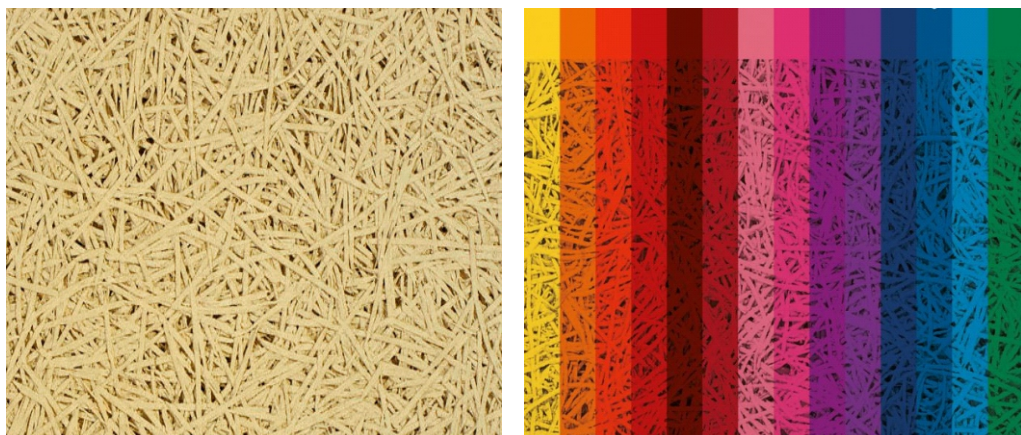
BAFFLE



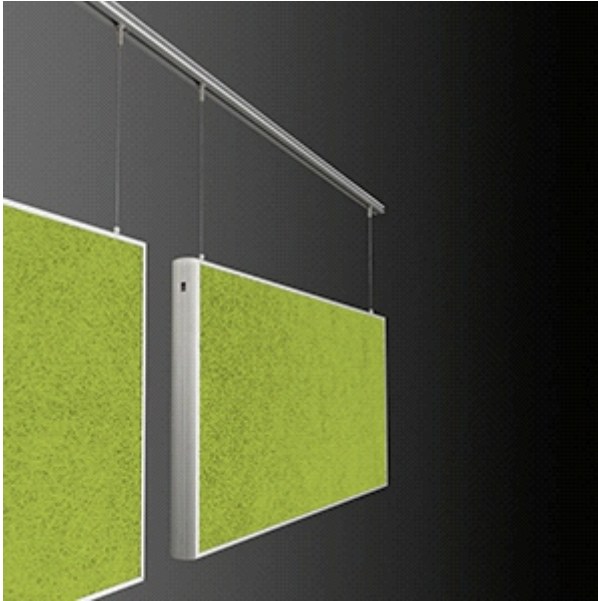
STO



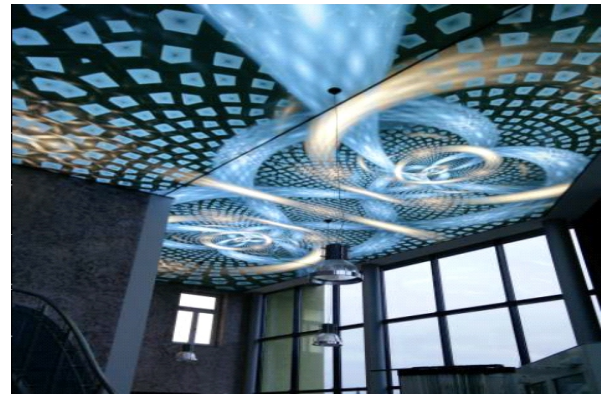
HERADESIGN



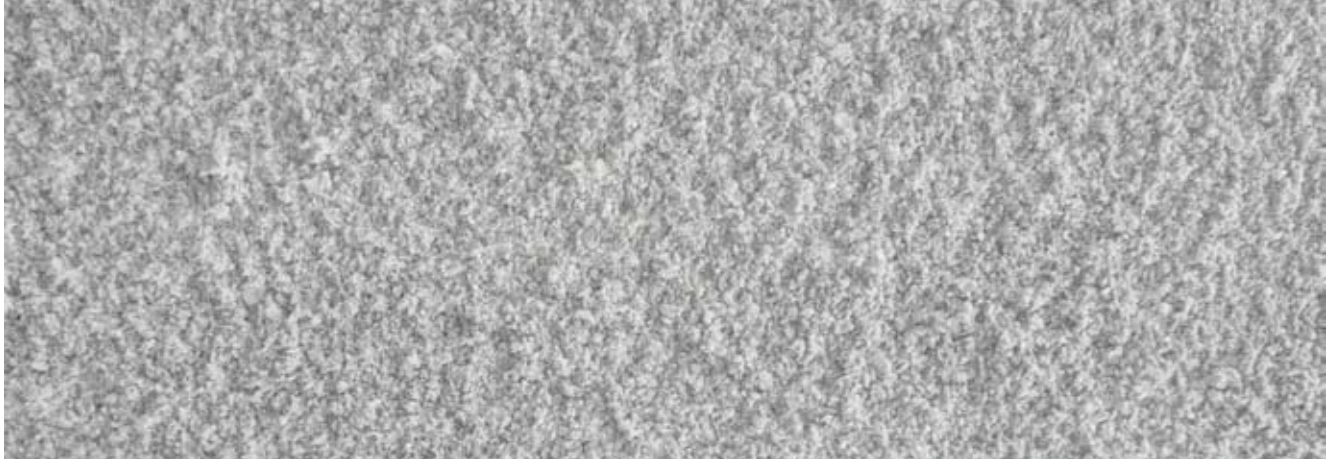
HERADESIGN



PONGS



TECWOOL MORTAR PASSIVE PROTECTION AGAINST FIRE



DESCRIPTION

Tecwool® F is a rock wool and cement spray mortar manufactured by **Tecresa Protección Pasiva®**, specifically engineered for fire protection of all types of building structures and faces.

TESTS

Tecwool® F has been tested in laboratories certified by ENAC or identical international entities pursuant to UNE EN, ASTM or similar standards. Likewise, real scale tests have been performed in tunnels under particularly limiting conditions such as American UL curve.

APPLICATION AND USAGE

Spraying machine:

Tecwool® F application is made by pneumatic spraying machines. **Tecwool® F** neutralizes and mixes in nozzle application where the mortar is mixed with spray water at the nozzle head.

The application machine supplies a flow between 3.2 and 18 kg/min. Mortar is applied with a spreading gun perpendicular to the substrate at a distance between 50 and 150 cm.

Prior to application:

Before mortar is applied on any surface, the following aspects should be considered:

- The substrate to be protected should be free from dust, oil, waste, poorly attached particles, release agents, paint residue, etc.
- It is recommended to use water with the application hose to wash dirt away from the faces. This will also help achieve a thermal balance between the mortar and the applied surface.
- **Tecwool® F** can be applied directly over surfaces with a temperature between 2°C and 45°C.

Application substrate:

- **Wood:** A wire mesh must be fixed to the support before mortar is applied.
- **Asbestos cement:** The surface must be clean and free of cracks between sheets.
- **Galvanised or pre-lacquered metal sheet:** Prior to mortar application an adhesive primer must be spread.
- **Synthetic plastic:** Prior to mortar application an adhesive primer must be spread.
- **Plaster surfaces:** Plenty of water must be applied on the surfaces before mortar is sprayed. If the exposed face of the structure to be protected is too smooth, it must be keyed to improve **Tecwool® F** adherence. In any case, for applications of more than 3 cm thick a wire mesh should be fixed to the support.
- **Bricks or porous supports:** Plenty of water must be applied on the surfaces before mortar is spread.
- **Steel metal structure:** Directly applied to support. Compatible with anti-rust primers.
- **Concrete:** Directly applied to support.

PASSIVE PROTECTION AGAINST FIRE

Once the mortar has been applied, water should be sprayed superficially to ensure optimum curing.

As a general rule, and regardless of the substrate to which the mortar is applied, for thickness values above 55 mm a wire mesh should be used.

All warnings regarding cement apply to **Tecwool® F**. Application of this product on non-ferrous metals is prohibited.

FINISHES

Tecwool® F can provide different finishes: rugged, smooth, painted, etc., according to different aesthetic requirements.

Once the spraying is completed and in order to obtain a smooth finish, a roller could be used and pressed slightly over the wet mortar until the desired finish is obtained.

It is possible to paint the mortar with elastic acrylic coatings to form a steam barrier. Before painting, the mortar should be completely dry (28 days).

HEALTH AND SAFETY

Tecwool® F is manufactured with inorganic components such as rock wool, classified according to European Directive 67/548/EEC as Xi; R-38 (health risk-free).

Likewise, it is neither toxic nor pathogenic; it does not contain free asbestos or crystalline silica; and it is not affected by fungi growth.

The Catalonia Institute of Construction Technology
Wellington, 19
E-08018 Barcelona
Tel.: (+34) 93 309 34 04
Fax: (+34) 93 300 48 52
qualprod@itec.cat
www.itec.cat



ITeC Institut de Tecnologia de la Construcció de Catalunya
Member of EOTA

European Technical Approval

ETA 11/0185



TECHNICAL CHARACTERISTICS AND SPECIFICATIONS

Composition	Cement, rock wool and additives.
Fire reaction	Non-combustible /Euroclass A1.
Bulk mortar density	250 Kg/m ³ ± 10%
Cured mortar apparent density	328 Kg/m ³ ± 10%
Sprayed fresh mortar apparent density	464 Kg/m ³ ± 10%
Thermal conductivity	0,053 W/mk
Alkalinity (pH value)	12,4
Bulk product, dried at 105°C	0,68% de H ₂ O
Steam permeability	2,1 (μ)
Resistance to fungi	Immune.
Protection against steel corrosion	Yes.
Flexural strength	0,09 Mpa
Compressive strength	0,24 Mpa
Wind erosion resistance	15 m/s β=90° y β= 15°
Toxic/Pathogenic	No.
Free crystalline silica asbestos	No.
Weighted sound absorption ratio	α w=0,8 (H)
Acoustic absorption class	Class B
Adherence	0,011 N/m ² failure.
Marketing	25 kg sacks in 600 kg pallets.

nanosound
Ses Yalıtım Sistemleri