What is ASNER SHEET?

Asner Sheet, developed solely by Ask Industries, is rubber sheet used as an inter layers for bonding different materials. It improves adhesion where shocks are given, increases water-resistance, and absorbs small vibration. It is notably thin and light, so it is used mainly for bonding materials and absorbing vibration in sporting goods.

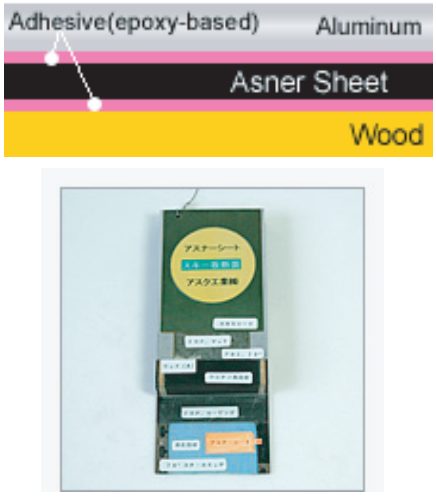
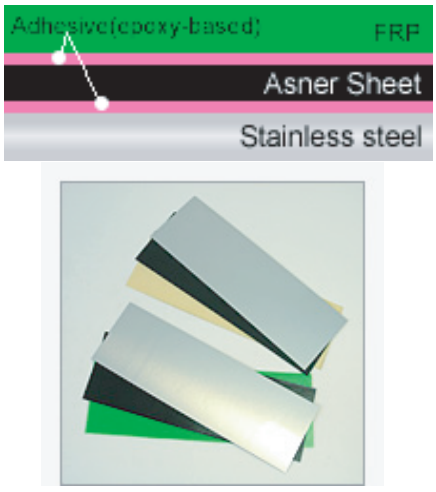
Since this sheet has little surface stickiness, it can also be used as the material for low-stickiness gaskets. We are now proposing to use it as quake-absorbing material.

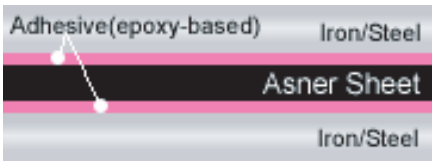
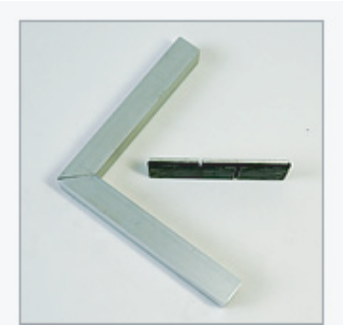
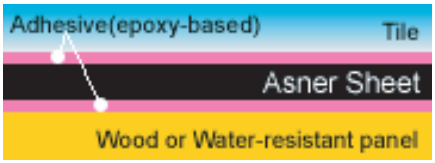
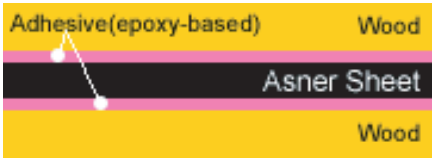
ASNER SHEET

Advances in composite materials have been expanding their applications year by year: to cars, buildings, sporting goods, and to electronics and machining equipment. This has imposed severer requirements on bonding the different materials.

ASNER SHEET and ASNER SHEET NW, which we developed to satisfy these requirements, have been used in the sporting goods industry for more than 30 years, and are now being used by about 50% of the world's ski and snowboard manufacturers. They are new types of rubber sheets with adhesion problems solved which were considered standing drawbacks, but with the advantages of conventional industrial rubber sheet still remaining.

BONDING DIFFERENT MATERIALS

MATERIALS	EXPLANATION	ILLUSTRATION
Aluminum - Wood	Aluminum sheet bonded directly to wood may peel on impact. To prevent this, Asner Sheet is used by Japanese and overseas manufacturers of sporting goods such as skis, snowboards, rackets, shafts, and so on. Asner Sheet works well in skis and snowboards of which repeated resilience from large flexure is required, and in jump skis that land from high in the air with a great impact.	
FRP - SUS	Asner Sheet prevents peeling caused by the thermal expansion difference between FRP and stainless steel.	

MATERIALS	EXPLANATION	ILLUSTRATION
Iron - Iron	Asner Sheet bonded between iron and iron prevents peeling caused by impact.	 
Tile - Panel	Asner Sheet improves water-resistance, and prevents peeling caused by the thermal expansion difference.	 
Wood - Wood	Recently, earthquakes occur frequently. Asner Sheet can be utilized as part of earthquake-resistant structural materials.	 

SUITABILITY OF ADHESIVES FOR ASNER SHEET

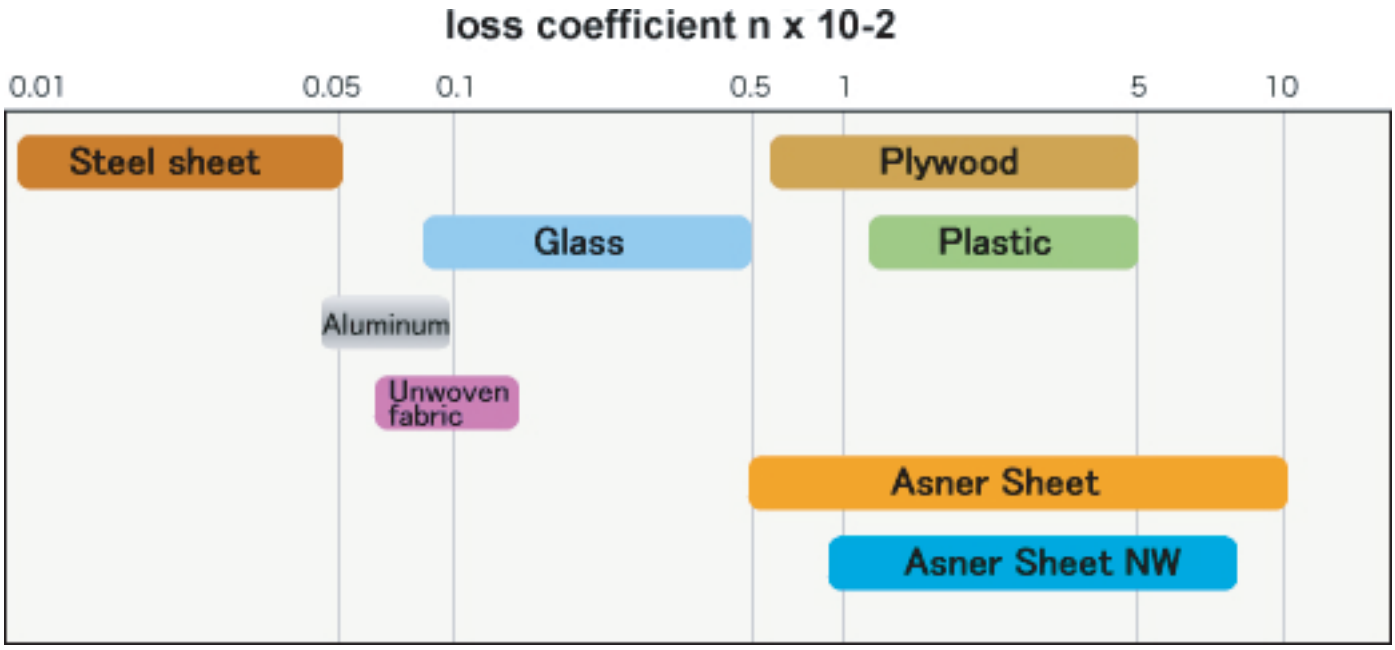
ADHESIVE	ASNER SHEET (WHITE)	NOTES
Polyamide-based	C	
Resorchinol-based	A	
Epoxy-based	A	
Urethane-based	A	Solventless adhesive
Rubber-based	A to B	Solvent adhesive (*1)
Urea-based	A	
Polyvinyl acetate-based	B	
Acrylic-based	A to C	(*2)
Cyanoacrylate-based	A to C	(*3)

(*1) B after 11 days, then moves gradually toward A;.
(*2, *3) ranges from A to C;, depending on the manufacturer and grade.

Evaluation Criteria for All but Rubber-based Adhesive
A: Asner Sheet breakage rate: 80-100 %
B: Asner Sheet breakage rate: 20-80 %
C: Asner Sheet breakage rate: 0-20 %

Evaluation Criteria for Rubber-based Adhesive
A: adhesion peel strength: 6 kgf/cm
B: adhesion peel strength: 1-6 kgf/cm
C: adhesion peel strength: 1 kgf/cm

VIBRATION ABSORPTION



Loss coefficient n was measured on a laminate with unwoven fabric, for example, sandwiched as a damper between aluminum sheets.

POSSIBLE APPLICATIONS

For Bonding Materials in:

skis, snowboards, archery equipment, mallet-golf clubs, aluminum sashes, tombstones

For Isolating Vibration in:

golf club shafts, seismic supports of buildings, cars, golf club heads and other sporting goods, sound insulating material for buildings

For Gaskets:

non-stick gaskets

PROPERTIES OF ASNER SHEET

MATERIAL	SBR (styrene-butadiene rubber)
HARDNESS	65 +5/-5
ADHESION PEEL STRENGTH	10 kg or above (180 degree peel, 25mm-wide sheet bonded between aluminum sheets

SPECIFICATIONS OF ASNER SHEET

THICKNESS (mm)	COLOR	SURFACE	TOLERANCE
0.15	Ivory white	Blasted	-0.05/+0.03
	Black		
0.20	Ivory white	Blasted	+0.05/-0.05
	Black		
0.75	Ivory white	Blasted	+0.05/-0.05

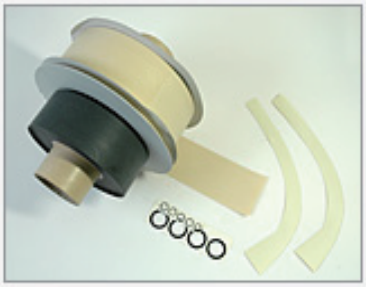
We can supply sheet cut to a width of from 7 mm to 450 mm.
We can also supply die-cut pieces.
One roll: 150 m (T 0.15 mm, T 0.2 mm), 40 m (T 0.75 mm)

STORAGE METHOD

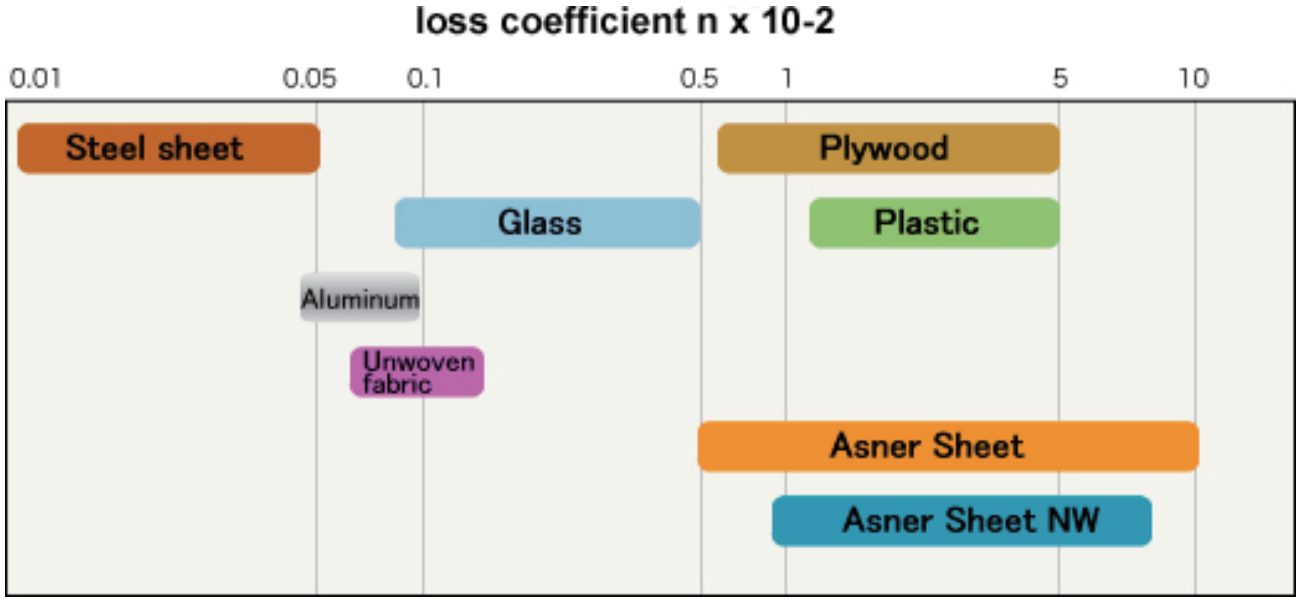
Asner Sheet degrades little in normal storage conditions because of stable properties of the rubber. Avoid direct sunlight and dust, however.

ASNER SHEET NW

Asner Sheet NW is non-woven fabric impregnated with SBR (styrene-butadiene rubber) latex, thus lighter and less expensive than Asner Sheet. It is used a lot for sporting goods to attenuate vibration. It is possible to print a logo or other information directly on Asner Sheet NW and use it as product surface material.



VIBRATION ABSORPTION



Loss coefficient n was measured on a laminate with unwoven fabric, for example, sandwiched as a damper between aluminum sheets.

POSSIBLE APPLICATIONS

For Bonding Materials in:
skis, snowboards, archery equipment, mallet-golf clubs, aluminum sashes, tombstones

For Isolating Vibration in:
golf club shafts, seismic supports of buildings, cars, golf club heads and other sporting goods

PROPERTIES OF ASNER SHEET NW

MATERIAL	SBR (styrene-butadiene rubber) latex and non-woven fabric
ADHESION PEEL STRENGTH	8 kg or above (180 degree peel, 25mm-wide sheet bonded between aluminum sheets)

SPECIFICATIONS OF ASNER SHEET NW

THICKNESS (mm)	COLOR	TOLERANCE
0.25	Ivory white	+0.05/-0.05

We can supply sheet cut to a width of 15 mm~500 mm.
We can also supply die-cut pieces.
One roll: 250 m