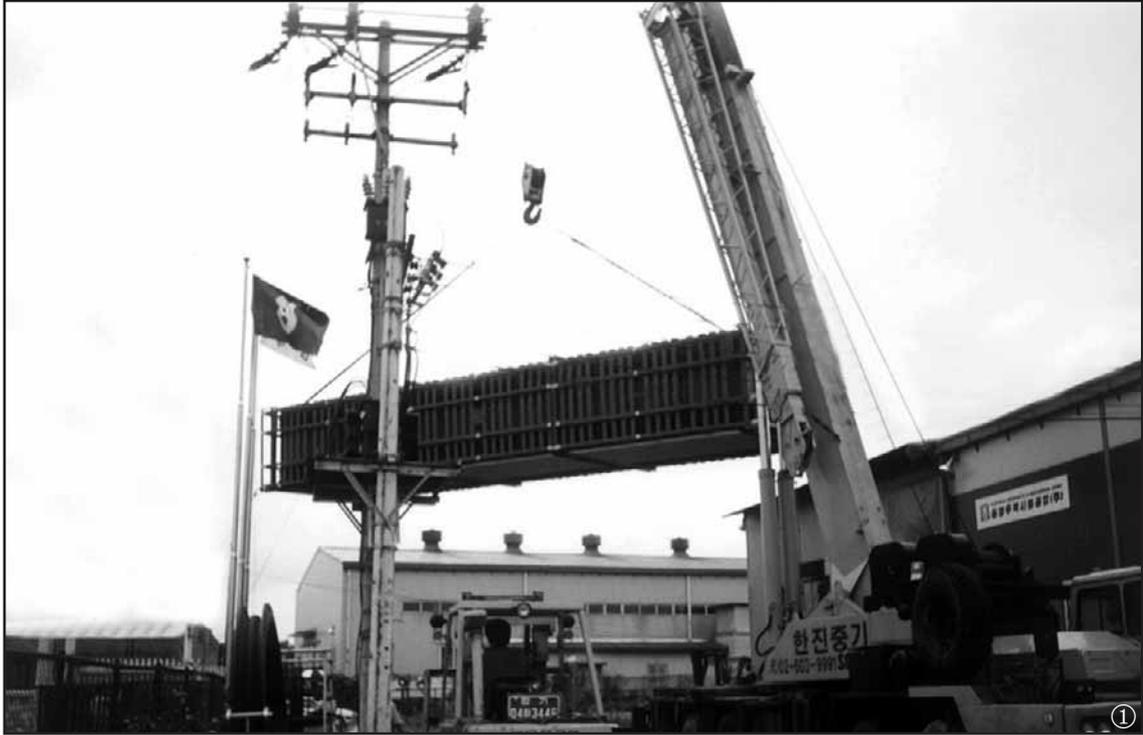
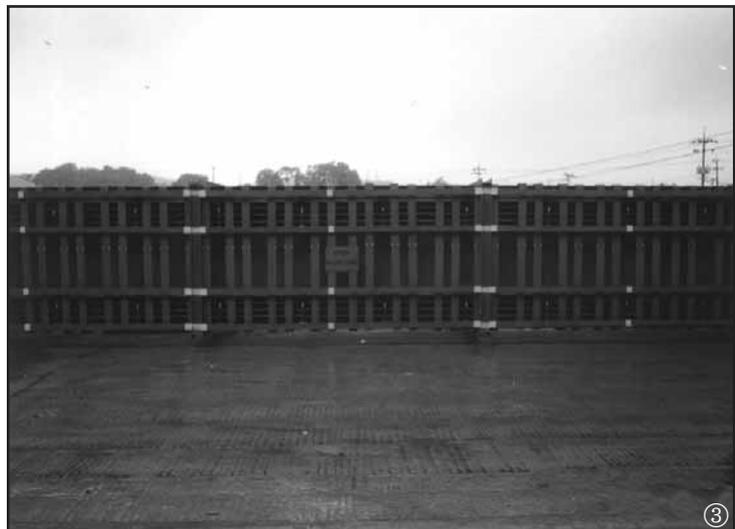
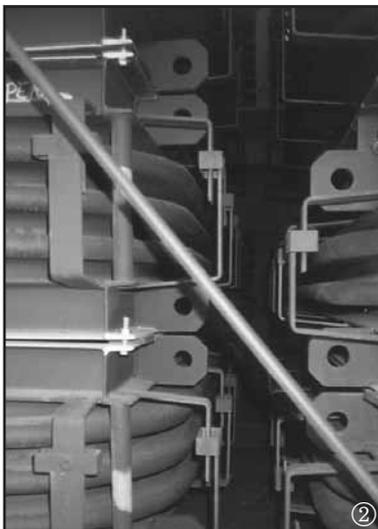


RECTANGULAR EXPANSION JOINT



- ① Metallic Rectangular expansion joints for flue gas line, $11182 \times 3482 \times 3000$.
The view of lifting for transportation
- ② Round corner type rectangular expansion joint, $9800 \times 1200 \times 500$
- ③ Double Mitered type Metallic Rectangular Expansion joint with insulation Support
 $11182 \times 3482 \times 2800$



G. METALLIC RECTANGULAR EXPANSION JOINT

1.1 MEGAFLEXON provides metal rectangular expansion joints subjected to axial, lateral, angular movements, or any combination of these as the same with the metallic circular expansion joint.

To complete this expansion joint in designing, the bellows are to be designed in accordance with the bellows performance equations defined in clause C-8 in the current EJMA edition, Expansion joint Manufacturer Association.

1.2 MEGAFLEXON can supply single mitered corner, double mitered corner, camera corner and round corner in case that especially specified

1.2.1 Single Mitered Corner

Construction

- ① Fitted with high convolution profiles.
- ② Maximum amount of movement possible for or given convolution profile.
- ③ Lowest cost.

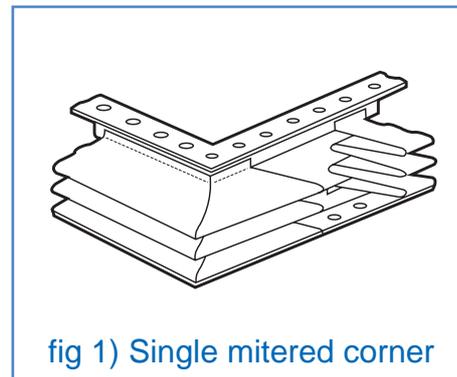


fig 1) Single mitered corner

1.2.2 Double Mitered Corner Construction

- ① Fitted with high convolution profile.
- ② Maximum amount of movement possible for a given convolution profile.
- ③ Low cost.

If a corner preference is not specified, MEGAFLEXON would design the double mitered corner configuration in corner construction (fig 2 Double Mitered Corner)

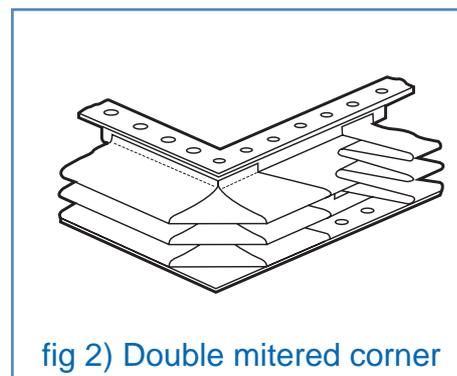


fig 2) Double mitered corner

1.2.3 Camera corner

- ① Low cost
- ② All corner seam welding to be performed on the outside of the corner in a easily accessible area.
- ③ Disadvantage : deep crevices at the corner, a reduction in movement available for a given profile and convolution count because the convolutions are overlapped at the corner.

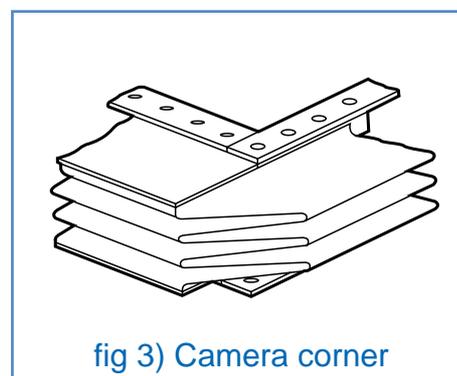


fig 3) Camera corner

MEGAFLEXON does not recommend this shape of expansion joint but will provide if specified. (fig 3. Camera Corner)

1.2.4 Round corner

MEGAFLEXON can supply the round corner design as well because this design has a advantage in the technical view point.

That is, this design results in the lowest corner stress if sit up and welding of the corner seams are carefully controlled.

MEGAFLEXON is producing 60mm high convolution profile as standard unless specified.

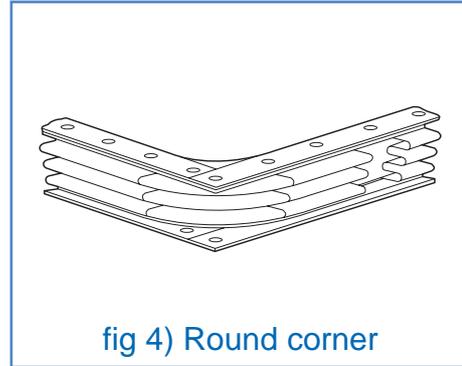


fig 4) Round corner

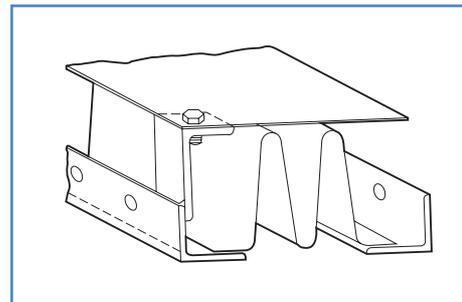
1.3 Miscellaneous

- Cover
- Internal sleeve
- Hinge
- Slotted hinges
- Internal packing
- Insulation support

1.3.1 Cover

Application :

- To avoid accidental damage to the bellows while shipment, installation or operation.
- To protect the bellows from weld splatter, or other metal work



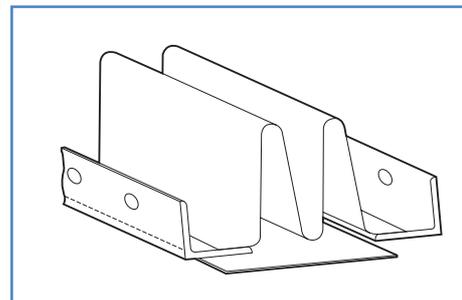
1.3.2 internal sleeve

Application

- Flow velocity is the above of 7~10m/sec and fluid is abrasive.

Advantage

In high temperature operation, or rapid variation of temperature, the air barrier may be formed on space between bellows and liner and the rapid increasement of skin temp. on bellows can be avoided, which result in the reduction of circumferential stresses in the bellows. That cause buckling or rapid fatigue failure of the bellows.

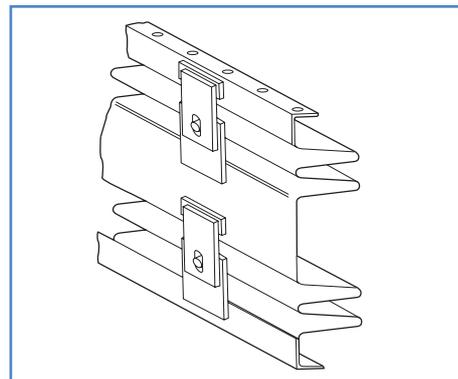
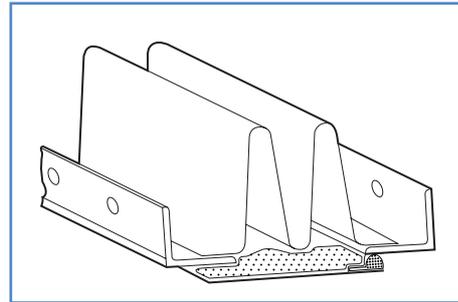


1.3.3 internal packing

Application

-The protection against thermal shock and cracking occurred in case that the rectangular expansion joint is subjected to the rapid temperature range. Normally, the packing reduce the skin temperature of bellows while operation.

-In the coal-fired boiler flue gas line, the packing acts like filter to avoid fly ash from accumulating in the bellows convolution. The fly ash filled can affect severe chemical attack and immobilization of bellows motion.

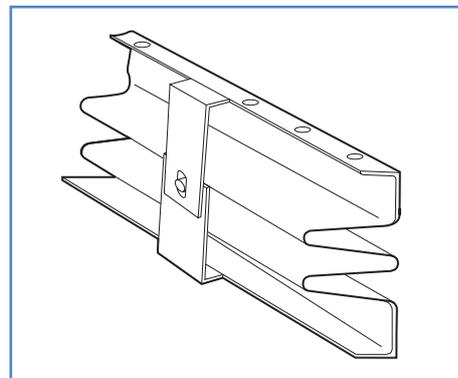


1.3.4 Hinges and slotted hinges

Application

-As the support for the weight of the ducting between two single expansion joints

-As the controller suitable for axial and lateral offset in universal type expansion joint.



1.3.5 insulation support

On outer insulation, it is often specified for the support of insulation material.

1.4 Material

MEGAFLEXON use following material on bellows fabrication(ASTM)

A240 T304, A240 T304L

A240 T316, A240 T316L

A240 T321, B168 Alloy600

A606(corten)

A36, or A387 Gr 12 would be applied on flange, internal sleeve and intermediate duct pipe if required.

1.5 Quality assurance

1.5.1 All welding shall comply with ASME section IX, latest edition.

1.5.2 All dimensional tolerance shall be in compliance with EJMA section D-2.

1.5.3 Quality assurance system is currently maintained according to ASME code section VIII

1.5.4 If the leak-test specified on ASME B31.3 is not available due to dimension, the air jet leak examination shall be applied, which is specified on D-3 section in EJMA latest edition.

1.6 Design Standard

Bellows Type	Max. working Pressure (kgf/cm ²)	No. of Corrugation	Total Expansion Absorbed (mm)	Length as Supplied				Spring rate (kg/mm)
				SL50	SL65	SL75	SL100	
Miter, Round Corner Type	0.5	1	± 20	160	190	210	260	$0.032 \times \ell$
		2	± 40	220	250	270	320	$0.016 \times \ell$
		3	± 60	280	310	330	380	$0.011 \times \ell$
Camera Corner Type	0.5	2	± 20	220	250	270	320	$0.011 \times \ell$
		3	± 30	280	310	330	380	$0.008 \times \ell$
		5	± 40	400	430	450	500	$0.006 \times \ell$

1.7 Shipment

- The expansion joint shall be prepared for shipment in such a manner that the quality, cleanliness and finish shall be maintained during shipment.
- Shipping bar shall be equipped to maintain proper shipping length and alignment and shipping bars shall be painted yellow
- Each expansion joint shall be tagged with recommended installation instruction
- MEGAFLEXON provide lifting lugs in case that expansion joint weighing more than 200kgf. If more than one lug is furnished, each lug shall be designed to carry the entire weight of the assembly.