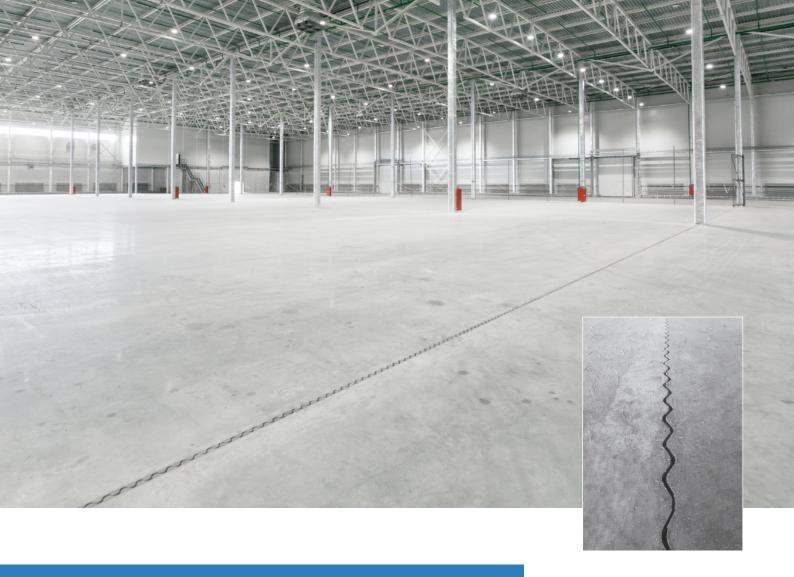


SLAB JOINT CRACK CONTROL JOINT





What is a crack control joint and why is it used?

After concrete is poured, it becomes smaller in volume because it loses water and goes through a chemical reaction called hydration. This is known as volumetric shrinkage or contraction. The amount of shrinkage is usually between 0.04% and 0.07%, depending on the concrete mix and the weather conditions.

Shrinkage happens both when the concrete is fresh (called plastic shrinkage) and after it hardens, during strength gain (called chemical shrinkage and drying shrinkage).

Plastic shrinkage occurs in fresh concrete and usually causes small, web-like cracks.

Different precautions are taken to reduce or prevent this type of shrinkage.

Drying shrinkage and hydration shrinkage happen when the water inside the concrete evaporates. This can be because of chemical reactions or because the concrete is adjusting to the air around it. As the water leaves, the concrete gets smaller in volume.

Volumetric shrinkage (shrinkage) in concrete depends on several factors such as pouring conditions, ground friction, ambient temperature, water/cement ratio, the grain structure of the concrete, and the type and amount of cement used. However, shrinkage can never be completely eliminated. It is a natural and unavoidable property of concrete.

The best way to avoid uncontrolled cracks caused by shrinkage is to use the right amount of reinforcement and place joints correctly. This helps reduce the number of joints needed and allows natural cracks to form only at the joints.

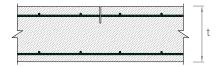
Also, in areas with different types of linear loads, such as pile foundations, column bases, and machine foundations where there may be vibrations, isolation joints are used.



Today, industrial buildings, warehouses, and hangar-type structures require very high precision in floor flatness.

In traditional site concrete work, many joints are cut, but over time the edges of these cuts break, causing uneven settling due to load transfer.

JOINT FORMATION IN THE TRADITIONAL METHOD



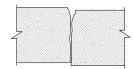
STRUCTURE OF THE JOINT AT THE FIRST CUT

Joints should be placed at intervals of 24 t or 30 t for the slab with 20 cm thickness average 4.8 mt x 4.8mt

maximum: 6mt x 6mt



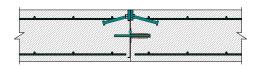
THE FIRST MONTHS
AFTER CUTTING



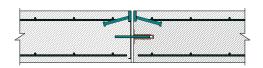
THE CONDITION AFTER LOADING

With adequate reinforcement—such as double-layer welded wire mesh Q188/188 in a 200 mm thick concrete slab, and a minimum reinforcement ratio (As,min) of 0.0358 m^2/m —it is possible to cast single concrete slabs up to 1,400 m^2 without the use of additional techniques like post-tensioning. For optimal performance, slab panels should be formed as close to a square shape as practical, with maximum dimensions of 30 m × 30 m. In this method, joints are formed naturally during the curing process and do not require additional saw-cutting. It is also recommended that the aspect ratio (long side to short side) of the slab not exceed 1.5 when applying this jointing approach.

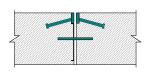
LARGE SCALE SLAB CASTING AND JOINT FORMATION



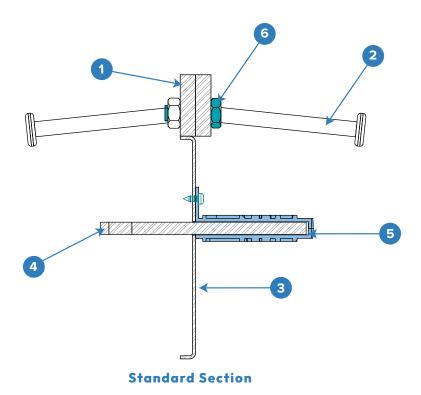
Using crack control joints reduces the number of joints by about 5 to 6 times.



After one week, during a three-month period, joints form due to hydration and drying shrinkage



Smooth performance after loading

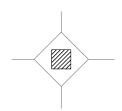


- 1- 40x10 cold-drawn flat bar with a smooth top finish prevents edge breakage.
- 2- 10 mm diameter stud anchors the steel flat bar to the concrete, resisting pulling forces during shrinkage and shear and twisting forces under load.
- 3- The fixed formwork sheet eliminates the need for extra formwork during concrete pouring. It keeps the load plate and top bars in the correct position.
- 4- The S335JR (St52) high-strength load transfer plate is placed on both sides of the ground concrete. It transfers the load during movement and prevents uneven settlement.
- 5- The load plate sleeve creates a gap that allows the load plate to work when shrinkage occurs in the concrete.
- 6- Plastic bolts and nuts that can break after shrinkage.

What Are The Advantages?



Safe load transfer



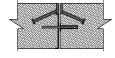
Prevents uncontrolled crack formation



6 times fewer joints compared to the traditional method



Allows pouring a larger area of concrete at once



High comfort



Easy and fast installation, saving labor costs



CONTENTS





STANDARD SLAB JOINT SERIES

4-7





SINUSOIDAL SLAB JOINT SERIES

SAYFA **8-9**





TRAPEZOIDAL SLAB JOINT SERIES

SAYFA





CRACK CONTROL JOINTS SJ90

SAYFA
11





REPAIR JOINTSINUSOIDAL, TRAPEZOIDAL AND
COMPACT REPAIR JOINTS

12-13





SCREED CRACK CONTROL JOINTS SJ 70 & DP 70 SAYFA **14-15**





STEEL SINUSOIDAL EXPANSION JOINT PROFILES

16-17

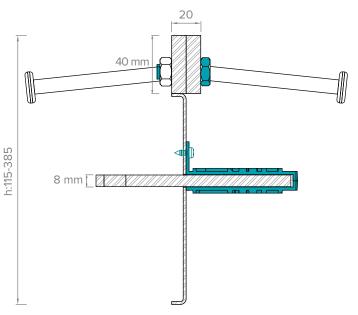




ADDITIONAL ACCESSORIES & REFERENCES

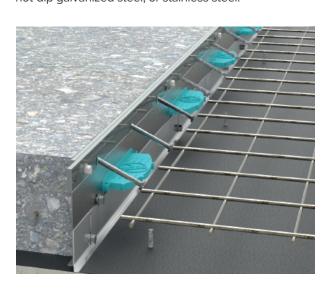
SAYFA **18-20**

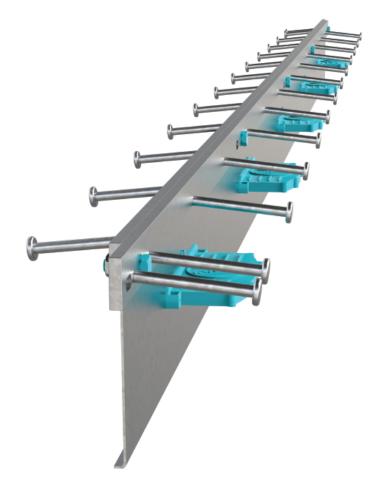
SJ 185 / 235 / 285 (8 mm Load Plate)



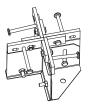


Arfen SlabJoint reduces the number of joints compared to traditional joint cutting methods. Instead of joints every 5x5 meters, joints form at intervals of 25 to 30 meters, which decreases the total number of joints to about 1/6. The American Concrete Institute (ACI) recommends using crack control joints like these instead of traditional joint cutting. Slab joint profiles are manufactured in black steel, hot-dip galvanized steel, or stainless steel.





ACCESSORIES (Optional)

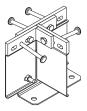








X Joint Detail

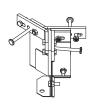






SJ005

T Joint Detail



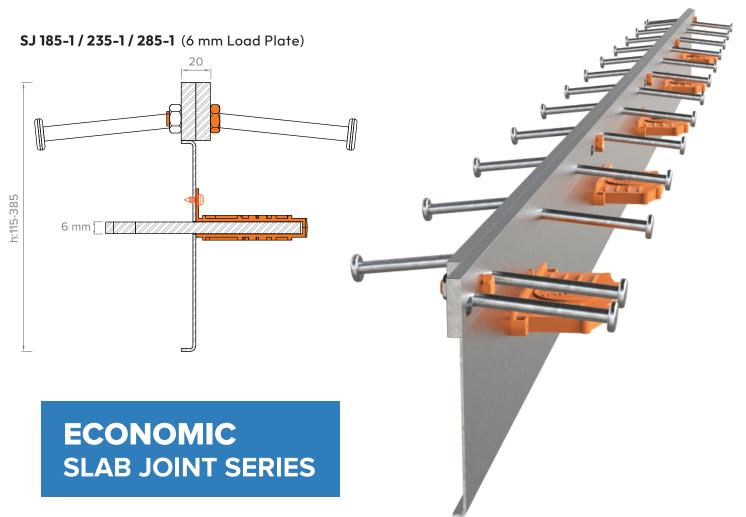




SJ006

Y Joint Detail

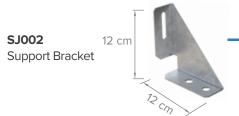
PRODUCT CODE	SLAB JOINT LENGHT (mm)	SLAB JOINT HEIGHT (mm)	RECOMMENDED DEPTH (mm)	LOAD PLATE CENTER (mm)
SJ 115	3000	115	115 - 140	600
SJ 140	3000	140	140 - 165	600
SJ 165	3000	165	165 - 185	600
SJ 185	3000	185	185 - 235	600
SJ 235	3000	235	235 - 285	600
SJ 285	3000	285	285 - 335	600
SJ 335	3000	335	335 - 385	600
SJ 385	3000	385	385 - 420	600



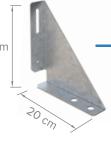
For industrial buildings with lighter traffic, the load plate can be designed as 6 mm thick. The top flat bar and anchors remain the same.



APPLICATION ACCESSORIES



SJ003 Support Bracket 20 cm

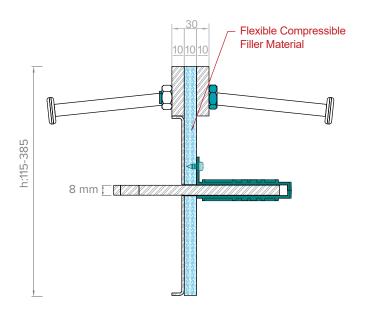


PRODUCT CODE	SLAB JOINT LENGHT (mm)	SLAB JOINT HEIGHT (mm)	RECOMMENDED DEPTH (mm)	LOAD PLATE CENTER (mm)
SJ 115-1	3000	115	115 - 140	600
SJ 140-1	3000	140	140 - 165	600
SJ 165-1	3000	165	165 - 185	600
SJ 185-1	3000	185	185 - 235	600
SJ 235-1	3000	235	235 - 285	600
SJ 285-1	3000	285	285 - 335	600
SJ 335-1	3000	335	335 - 385	600
SJ 385-1	3000	385	385 - 420	600



Support Bracket Application

SJ 185-4 / 235-4 / 285-4 ISOLATION JOINT

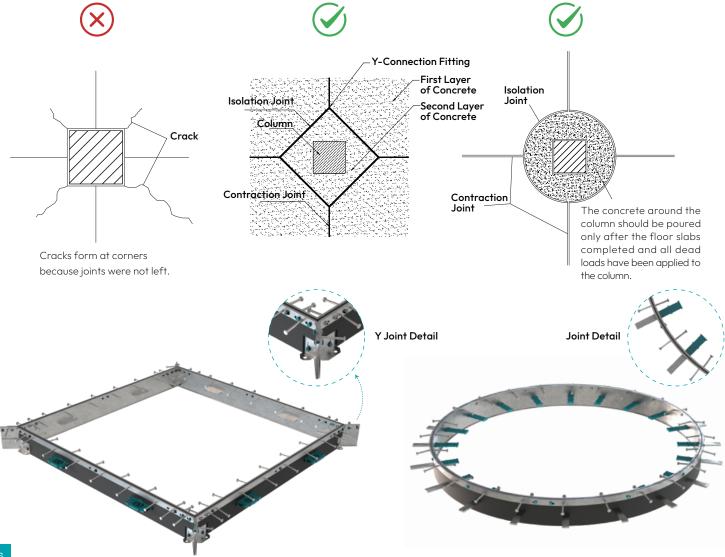


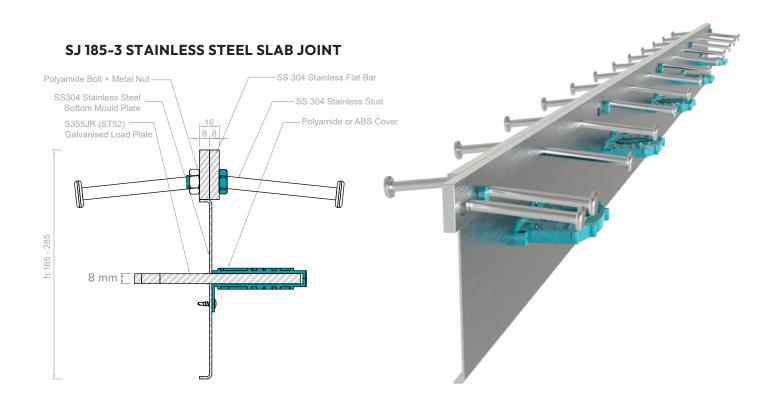




COLUMN ISOLATION JOINT APPLICATION

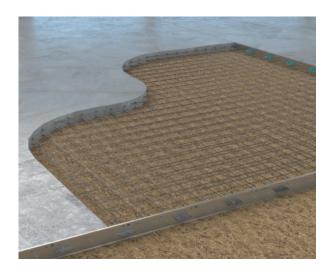
In industrial flooring applications, special precautions must be taken in critical areas such as around columns and where machine foundations meet slab concrete. The most effective method, as shown in the photo above, is to create a joint around the column. This isolates the column from the floor slab, preventing any settlement in the column or vibrations from crane tracks from affecting the concrete floor. In isolation joints, the joint gap is pre-formed, unlike straight joints where it is typically created after pouring.





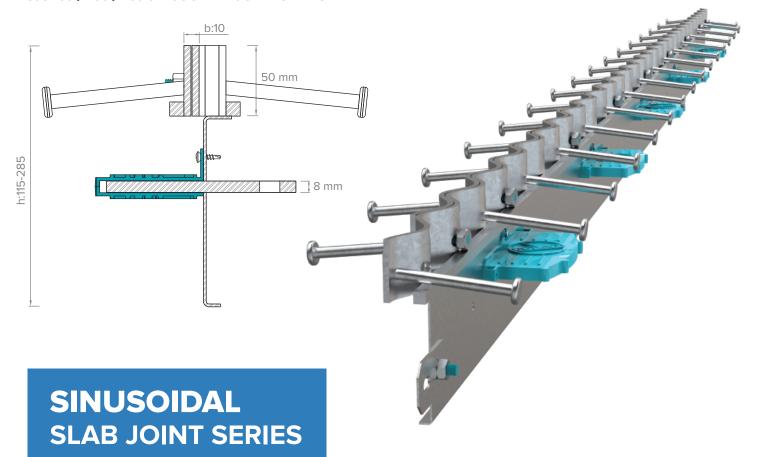
STAINLESSSLAB JOINT SERIES

Stainless steel crack control joints, especially in industrial buildings requiring hygiene (food, pharmaceutical, chemical, etc.), are crack control joints with a completely stainless upper surface and a load plate produced by hot-dip galvanized. (The load plate is produced by galvanising because it is made of ST52.)





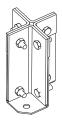
PRODUCT CODE	SLAB JOINT LENGHT (mm)	SLAB JOINT HEIGHT (mm)	RECOMMENDED DEPTH (mm)	LOAD PLATE CENTER (mm)
SJ 165-3	3000	165	165 - 185	600
SJ 185-3	3000	185	185 - 235	600
SJ 235-3	3000	235	235 - 285	600
SJ 285-3	3000	285	285 - 335	600



The sinusoidal slab joint prevents noise and vibration during vehicle passage due to sine waves smaller than the wheel contact surface area of transport vehicles. When one part of the wheel presses on the first sinusoidal wave, the other part presses on the opposite sinusoidal wave, eliminating point-to-point load transfer and vehicle passage, thereby preventing noise and vibration. It also ensures more balanced load distribution.



ACCESSORIES







SJ007 Sinusoidal X Joint Detail







SJ008 Sinusoidal T Joint Detail



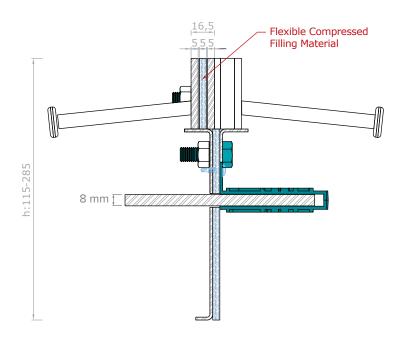




SJ009

Sinusoidal Y Joint Detail

SJS 185-4 / 235-4 / 285-4 SINUSOIDAL ISOLATION JOINT







SINUSOIDALISOLATION JOINT

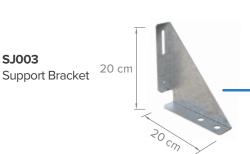
It is installed as a pre-opened joint in the joints between columns and machine foundations of the same joint.





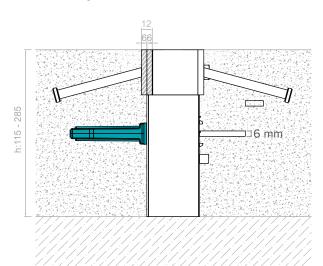
APPLICATION ACCESSORIES

SJ002 Support Bracket



PRODUCT CODE	SLAB JOINT LENGHT (mm)	SLAB JOINT HEIGHT (mm)	RECOMMENDED DEPTH (mm)	LOAD PLATE CENTER (mm)
SJS 115	2990	115	115 - 140	600
SJS 140	2990	140	140 - 165	600
SJS 165	2990	165	165 - 185	600
SJS 185	2990	185	185 - 235	600
SJS 235	2990	235	235 - 285	600
SJS 285	2990	285	285 - 335	600

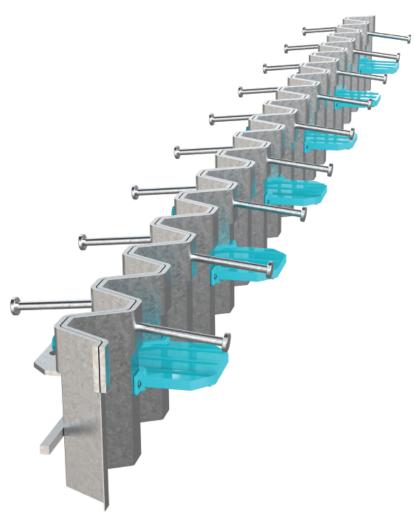
SJT 185 / 235

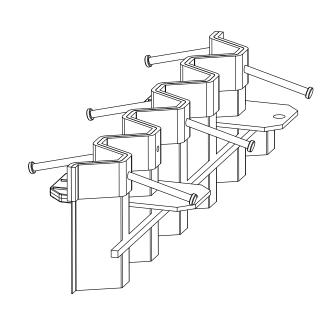




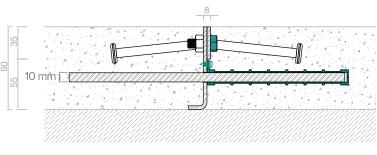
The arfen trapezoidal slab joint is a control joint that prevents noise and impact formation in the event that crack control joints open more than expected, due to its trapezoidal upper structure. Its structure, which eliminates impact effects, provides a quiet working environment. Additionally, it prevents damage to concrete edges and forklift tyres. The 6mm-thick trapezoidal upper plates are designed to withstand heavy vehicle traffic.

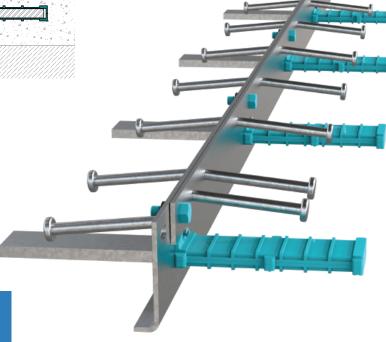






PRODUCT CODE	SLAB JOINT LENGHT (mm)	SLAB JOINT HEIGHT (mm)	RECOMMENDED DEPTH (mm)	LOAD PLATE CENTER (mm)
SJT 115	2250	115	115 - 140	375
SJT 140	2250	140	140 - 165	375
SJT 165	2250	165	165 - 185	375
SJT 185	2250	185	185 - 215	375
SJT 215	2250	215	215 - 235	375
SJT 235	2250	235	235 - 285	375
SJT 285	2250	285	285 - 335	375

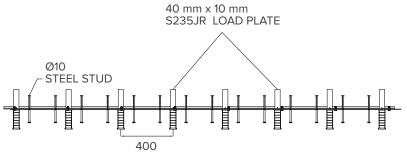


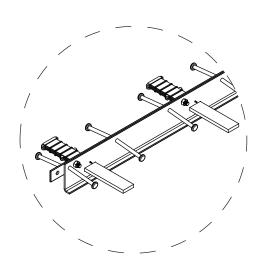


SJ 90SLAB JOINT SERIES

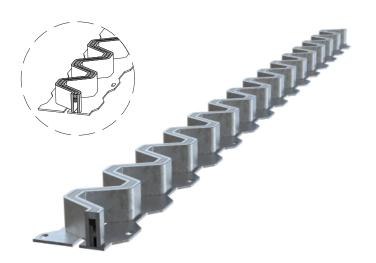
Arfen slab joint sj90 is a product that can provide wide joints in floor slabs with low height and prevent damage to concrete corners and edges under repeated wheel loads. Additionally, it increases durability by transferring wheel loads between slab concrete. With these features, it ensures the longevity of floor concrete and reduces maintenance costs. Arfen Slab Joint SJ90 can be used in various applications, from industrial to commercial areas.

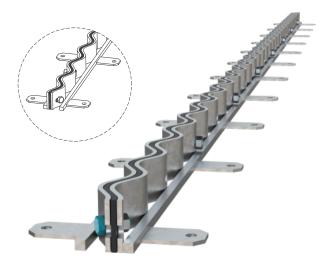




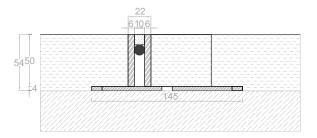


REPAIR JOINT



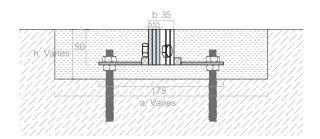


RP01 TRAPEZOIDAL REPAIR JOINT





RP02 SINUSOIDAL REPAIR JOINT



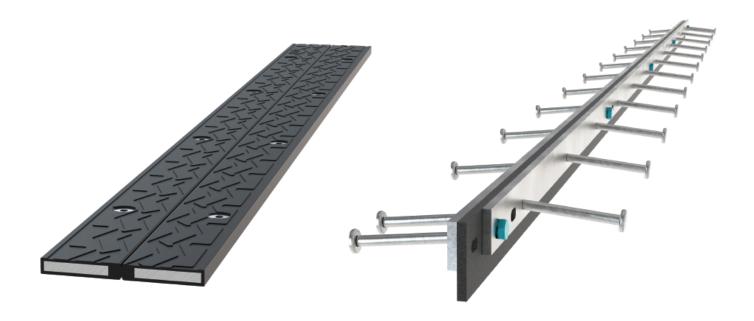


Damaged joints represent a significant problem for all types of factories and warehouses. Joints constructed using traditional methods tend to deteriorate over time due to the repeated impact of wheel loads, falling materials, and similar stresses. What may begin as a minor crack can progressively expand, eventually leading to serious structural and operational issues.

Technological advancements have brought changes to the types of transport vehicles used within industrial facilities. Conventional rubber-tyred, petrol-powered forklifts are increasingly being replaced by compact, electric-powered models equipped with hard wheels.

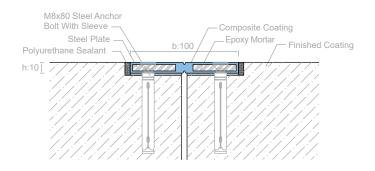
These newer vehicles exert greater point loads on joints compared to their rubber-tyred predecessors, accelerating joint deterioration. Once damage starts to develop in the joints, prompt intervention and repair are essential. However, to ensure long-term durability, repair solutions must go beyond traditional mortar applications. Mortar-only repairs often fail to withstand recurring loads, leading to the reappearance of damage over time.

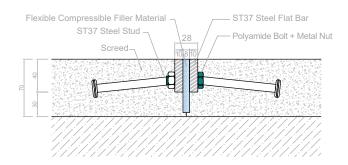
The Arfen Repair Joint System offers a long-lasting and effective solution. Designed to absorb the repeated impact of wheel loads on industrial floors and joints, it not only ensures structural integrity but also helps reduce noise and vibration thanks to its specially engineered trapezoidal and sinusoidal shape.



RP03 (Composite Repair Joint) Rubber + Steel Composite Repair Joint

RP04 REPAIR JOINT



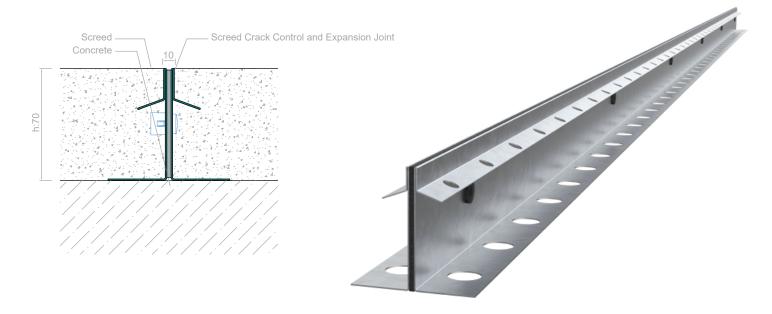






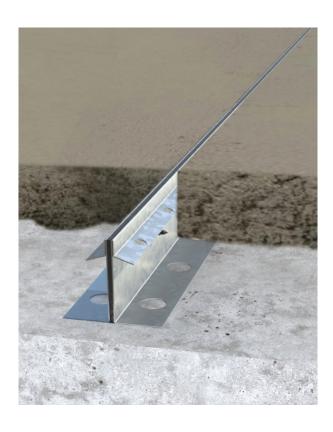
RP03 rubber + steel repair joint is used to repair joints that are damaged or broken very close to the surface. The rubber surface provides a vibration-free and quiet transition.

RP04 is used for repairing deeper damaged joints. It is installed at the proper level and the sides are filled with high-strength concrete or epoxy mortar to complete the joint repair.

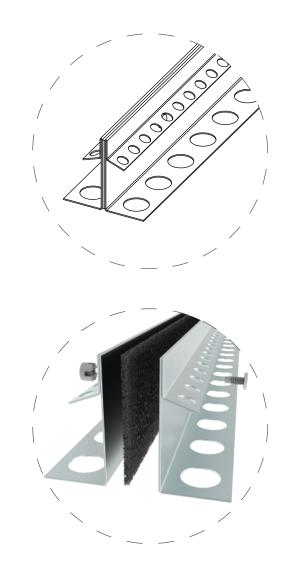


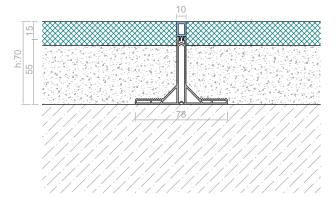
SJ 70 SCREED CRACK CONTROL JOINT

These joints are used especially in industrial floors with surface hardeners, factory floors, and heavily used parking areas to prevent uncontrolled cracks and edge breakage of joints. They do not require formwork and reduce the number of joints, making them preferred in industrial flooring. After grinding, the sealant is applied directly.



PRODUCT CODE	HEIGHT (mm)	LENGTH (mm)
SJ 70	70	3000
SJ 80	80	3000







DP 70MOVEMENT JOINT PROFILE

DP70 is a movement joint profile used in marble, granite, and ceramic applications. It automatically sets the screed height to create the joint at the start. The top part can later be filled with our ready-made movement joint profiles or sealant. The production length is 3000 mm.





It is placed at the correct level with fresh mortar.



After at least one day, the screed is poured to the planned thickness.



The joint is protected until the ceramic stage.



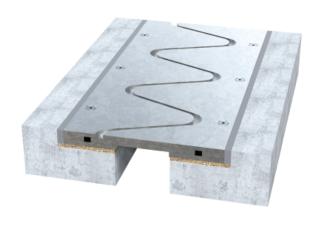
Ceramic or marble is installed.

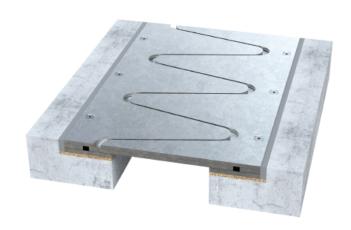


After at least one day, the plastic part on top is removed.



The joint is filled with suitable joint sealant or standard wedge joint profile.





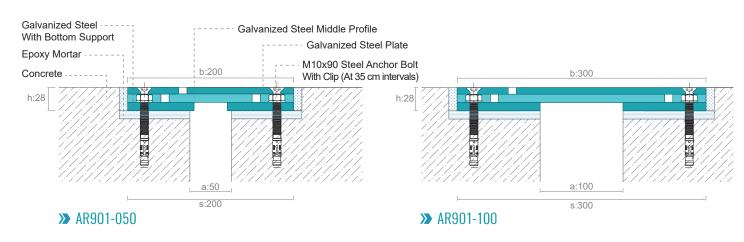
STEEL SINUSOIDAL EXPANSION JOINT PROFILE

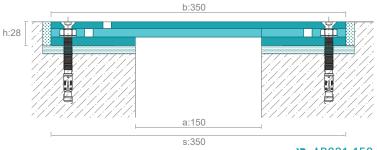
These sinusoidal steel expansion profiles are designed for industrial floors with forklift traffic. Their sinusoidal top surface and steel body provide strong resistance to heavy loads under the floor covering. They are manufactured in hot-dip galvanized and stainless steel. T and X joint details are available. Especially, the top plate and middle parts are made from high-strength SJ335HR steel.











» AR901-150

In facilities requiring hygiene, such as food plants, it can be manufactured from 304 stainless steel or, upon request, from 316 grade steel.

PRODUCT CODE	DESCRIPTION	JOINT WIDTH (a) mm	VISIBLE SURFACE (b) mm	PROFILE HEIGHT (h) mm	TOTAL WIDTH (s) mm	SURFACE	MOVEMENT CAPACITY mm	LOAD CAPACITY
AR 901 -050	Steel Bottom Support+Galvanized Steel Top Surface	50	200	28	200	Galvanized	± 10	60 Ton 🜉 🤉 9 Ton 🔊 L
AR 901 - 100	Steel Bottom Support+Galvanized Steel Top Surface	100	300	28	300	Galvanized	± 10	60 Ton 🚃 9 Ton 🔊 L
AR 901 - 150	Steel Bottom Support+Galvanized Steel Top Surface	150	350	28	350	Galvanized	± 10	60 Ton 🜉 🔋 9 Ton 🔊 📙
AR 901 - 200	Steel Bottom Support+Galvanized Steel Top Surface	200	400	28	400	Galvanized	± 10	60 Ton 9 Ton 8 L

The production lengths are 2000 mm.





ALUMINIUM + STEEL

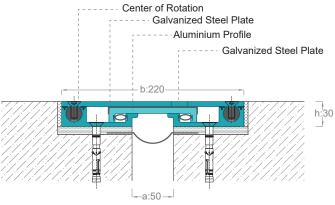
SINUSOIDAL EXPANSION JOINT PROFILE

Because of the aluminum profile, it can rotate during vertical movements.

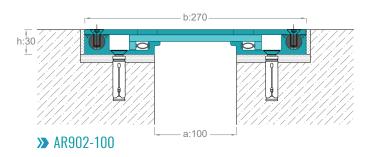


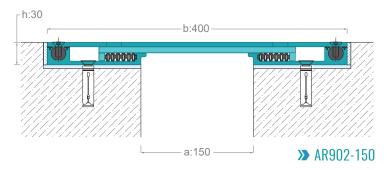






>> AR902-050





In facilities requiring hygiene, such as food plants, it can be manufactured from 304 stainless steel or, upon request, from 316 grade steel.

PRODUCT CODE	DESCRIPTION	JOINT WIDTH (a) mm	VISIBLE SURFACE (b) mm	PROFILE HEIGHT (h) mm	TOTAL WIDTH (s) mm	SURFACE	MOVEMENT CAPACITY mm	LOAD CAPACITY
AR 902 - 050	Aluminium Bottom Support+Galvanized Steel Top Surface	50	220	30	220	Galvanized	± 20	60 Ton 🜉 9 Ton 🔊
AR 902 - 051	Aluminium Bottom Support+Stainless Steel Top Surface	50	220	30	220	Stainless	± 20	60 Ton 🚚 9 Ton 🔊
AR 902 - 100	Aluminium Bottom Support+Galvanized Steel Top Surface	100	270	30	270	Galvanized	± 25	60 Ton 🜉 9 Ton 🔊 L
AR 902 - 101	Aluminium Bottom Support+Stainless Steel Top Surface	100	270	30	270	Stainless	± 25	60 Ton 🜉 🤉 9 Ton 🔊 L
AR 902 - 150	Aluminium Bottom Support+Galvanized Steel Top Surface	150	400	30	400	Galvanized	+30/-20	60 Ton 🜉 9 Ton 🔊
AR 902 - 151	Aluminium Bottom Support+Stainless Steel Top Surface	150	400	30	400	Stainless	+30/-20	60 Ton 🜉 9 Ton 🔝

The production lengths are 2000 mm.

SJ SERIES **CONNECTION ACCESSORIES**

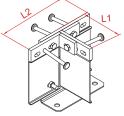






X Joint Detail New type



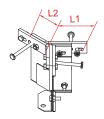










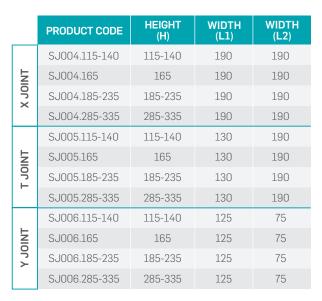


SJ006

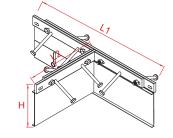


Y Joint Detail New type





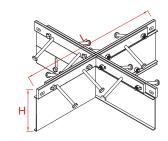




SLAB JOINT T JOINT DETAIL (Old Type) SJ 185T DETAIL

TYPE	HEIGHT (H)	WIDTH (L1)	WIDTH (L2)
SJ 115T	115	500	250
SJ 140T	140	500	250
SJ 165T	165	500	250
SJ 185T	185	500	250
SJ235T	235	500	250
SJ285T	285	500	250

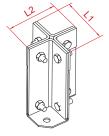


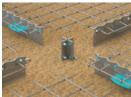


SLAB JOINT X JOINT DETAIL (Old Type) SJ 185X DETAIL

TYPE	HEIGHT (H)	WIDTH (L1)	WIDTH (L2)
SJ 115X	115	500	500
SJ 140X	140	500	500
SJ 165X	165	500	500
SJ 185X	185	500	500
SJ235X	235	500	500
SJ285X	285	500	500

SJS SERIES CONNECTION ACCESSORIES

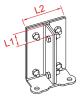






SJ007

Sinusoidal X Joint Detail

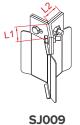






SJ008

Sinusoidal T Joint Detail





Sinusoidal Y Joint Detail



HEIGHT (H) WIDTH (L1) WIDTH (L2) PRODUCT CODE SJ007.115-140 115-140 120 120 X JOINT SJ007.165 165 120 120 SJ007.185-235 185-235 120 120 SJ007.285-335 285-335 120 120 SJ008.115-140 115-140 65 120 T JOINT SJ008.165 165 65 120 SJ008.185-235 185-235 65 120 SJ008.285-335 285-335 65 120 SJ009.115-140 115-140 50 50 Y JOINT SJ009.165 165 50 50 SJ009.185-235 185-235 50 50 SJ009.285-335 285-335 50 50

APPLICATION ACCESSORIES

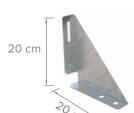
Arfen Slab Joint crack control and shrinkage joints are installed efficiently, cost-effectively, and precisely using specially designed installation accessories.



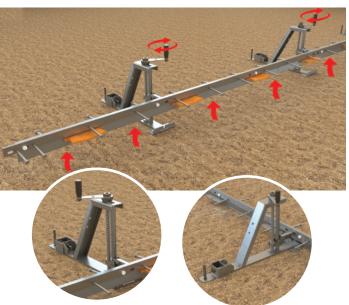
SUPPORT BRACKET

SJ003









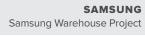
SJ001HEIGHT ADJUSTABLE SUPPORT BRACKET



REFERENCES



KÜTAHYA PORSELEN Kütahya Seramik Project







MUFY TEKSTILUnity Textile Factory

HABAŞ Habaş Factory Project





EAE ELEKTRİK Eae Elektrik Factory Project

NA YAPI - LNA YAPI Libya Bingazi 28 Mart Stadium





ARKASRailport Project

SYNERGY CONSTRUCTIONSynergy Factory Project





TEMA METALTema Metal Factory Project

APAK GIDABİM Chips Factory





BIEN SERAMIKBien Seramik Factory Project

BIM & FILE Factory Project





ASTOR ENERJİAstor Enerji Üretim Tesisi

NESTLE Nestle Fabrika Project





NAMET Namet Factory Project

POLISANPolisan Factory Project





KASTAMONU ENTEGREEntegre Factory Project

GAP İNŞAAT Türkmenistan Port Project





TEKNOFORMTeknoform Factory Project

KARYER Karyer Factory Project





DHLDHL Cargo Building

KONYA ORGANIZE SANAYI
Logistics Center and Customs Area





DİMAK MAKİNA Dimak Makina Factory Project

KASTAMONU PLASTIK Çorlu Factory Project



APPLICATION PHOTOS































For detailed information, please contact us



+90 (212) 485 16 15



arfen@arfen.com





