



ELEPHANT
Gypsum Board

Elephant PlusLine

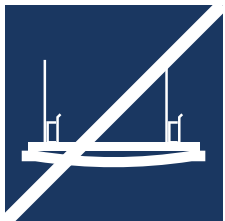
Concealed Ceiling Metal Profile



Elephant PlusLine



Solving various problems including



- Uneven finished ceiling levels (sagging)
- Weak metal frames, high risk of collapsed ceiling
- Economic alternative required yet still meets with safety standard and provides aesthetics finished ceiling

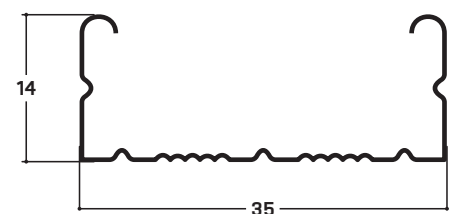
Applications

High quality metal profile for installation of plasterboards for interior concealed ceiling.



Size and Weight

Gauge	0.40 mm*
Dimensions	14 x 35 mm
Length	4 m/piece



*Deviation following TIS 50-2561 standard.



Features



Strong & Safe

- Manufactured from high quality, certified cold-rolled galvanized steel of 0.40 mm gauge.
- Specially designed profile increases system strength.
- All component parts (accessories) were specially designed and tested for safety.
- All component parts (accessories) were manufactured from high quality material.
- Actual weight as specified (provable by weighing).



Lightweight

- Lighter than wood frames, Metal profile does not twist.



Insect-Free

- Free from termites and other insects.



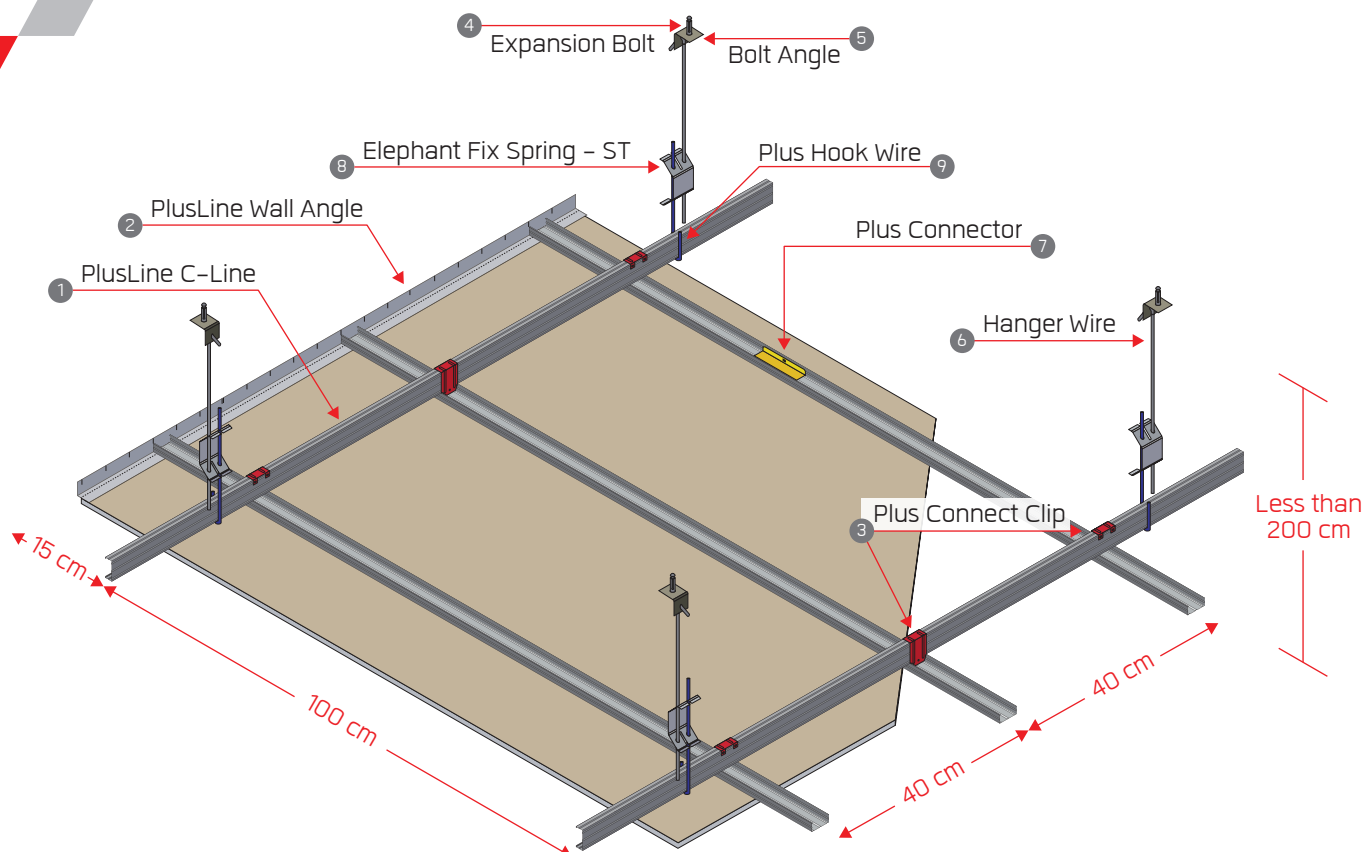
Easy & Fast Installation

- Easy to verify correct installation after completion.
- Easier and faster installation than traditional system.
- Modern manufacturing technique ensure high manufacturing precision.
- No special equipments needed for installation.



Durable

- Hot-dipped galvanized steel of TIS 50-2561 standard or Alloy dipped steel of JIS G3302 galvanized with 120 g/m² of zinc is suitable for humid climates, decreasing rusting problems.



Component Parts



PlusLine C-Line
14 x 35 x 0.40 mm Length 4 m



PlusLine Wall Angle
20 x 20 x 0.40 mm Length 2.4 m



Plus Connect Clip
Gauge 0.5 mm



Expansion Bolt



Bolt Angle



Hanger Wire*
Ø4 mm. Length 0.6 m, 1.1 m, 2.1 m

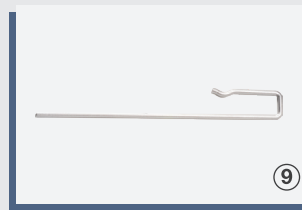


Plus Connector
Gauge 0.50 mm

Adjustable Hanger Set Lower Part Length 200 mm



**Elephant
Fix Spring - ST***



Plus hook Wire*

***Patent Pending**

1. โครงและอุปกรณ์ยึดที่ได้มาตรฐาน ผ่านการทดสอบจากสถาบันที่เชื่อถือได้
2. ความหนาของโครง และอุปกรณ์
3. ความหนาของชั้นสังกะสีที่เคลือบโครงคร่าว
4. ระยะการติดตั้งหanger ระยะห่างโครง ตามมาตรฐานผู้ผลิตที่ได้ออกแบบ



Installation Method

1. Mark ceiling level around perimeter of room and screw in PlusLine Wall Angle.
2. Assemble hanging set and adjust length of Hanger Wire and Plus Hook Wire to the distance of the upper floor and the main runner. (Warning: For safety reasons, use only Elephant brand 4 mm diameter Hanger Wires and Hook Wires)
3. Securely attach bolt angles to upper floor in a 1.00 x 1.20 meter grid. Hang the assembled hanging sets to the bolt angles.
4. Attached PlusLine C-Line vertically into hook wire. Make sure that each hanging set (Plus Hook Wire) is attached on switching side on every 1.20 meter. Connect main runners by using Plus Connector. Ensure that connection points are not all paralalled across the ceiling. Readjust height of the hanging set again if necessary.
5. Lock Plus Connect Clip into Plus C-Line cross-runners, then lock to PlusLine C-Line main runners at every 40 cm intervals. Verify that assembled metal frame is leveled. Make sure that each Plus Connect Clip is attached on switching side.
6. Screw in tapered-edge Elephant Brand gypsum board with 25 mm screws at every 30 cm intervals and 20 cm interval at the edge of the board.
7. Coat every joints with Elephant EasyJoint 120 3 times each or EasyQuik 2 times each and cotton tape according to compound instructions.

Safety Assurance

Not only an economical metal profile, but Plus C-Line also developed with safety in mind. Moreover, Elephant PlusLine increase the user confidence with:

- Advanced manufacturing process that increases profile loading capacity with **more than 3 times minimum safety factor**
- All component parts use superior raw material quality than other similar products in the market.
- Designed for easy installation and reduce incorrect installation.
- Easy to verify correct installation after completed.
- Corrosion-resistant with minimum (zinc coat) galvanizing of 120 g/m² or equivalence which is **thicker than 50% of similar profiles in the market**. In addition to directly affecting the usage life of metal profiles, corrosion is one of the main factors affecting suspended ceiling safety. As metal profiles are not seen after completion of ceiling work, there is no warning of insecure ceiling.

Comparison between Elephant PlusLine and regular 0.38 mm C-Line

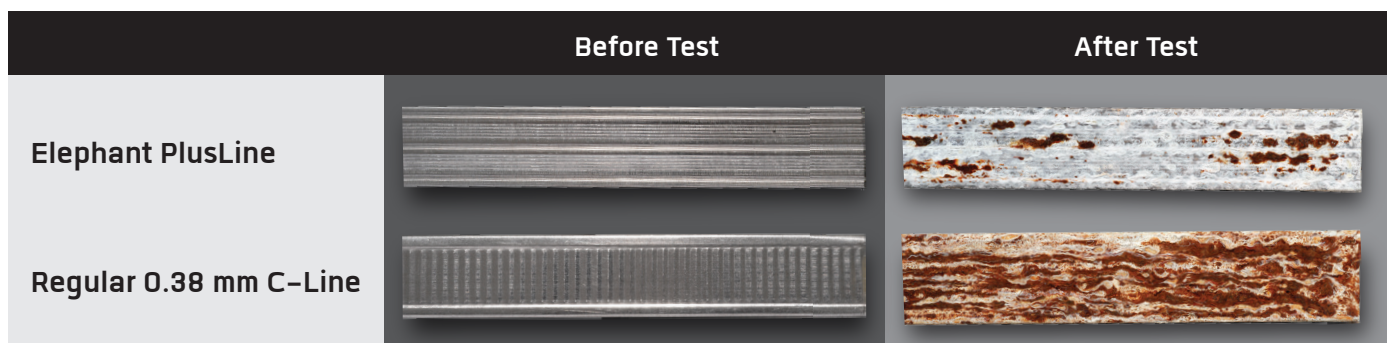


Figure shows the Salt Spray Test* (following ASTM B117-97, ASTM D1654) result after 300 continuous hours, comparing Elephant PlusLine with regular 0.38 mm C-Line

*Salt Spray Test is a process of accelerating the rust occurrence by 100-120 times faster than in non polluted coastal area environment.

Elephant Fix Spring – ST

Safe

- Elephant Fix Spring – ST manufactured from High Quality Stainless Steel for spring, pass the Salt Spray Test (following ASTM B117-97) more than 300 continuous hours, compared with other spring in the market.

Strong

- Elephant Fix Spring – ST especially designed to hold tight rod wire for high loading capacity. The assembled hanging sets pass more than 120 kg tension test. (Safety factor = 4)

Standard

- Elephant Fix Spring pass 1,000 times of continuous pressing test without deformation.



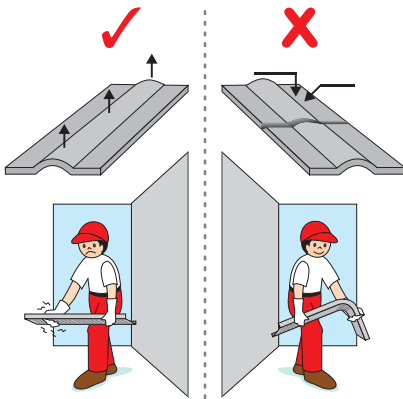
Elephant Fix Spring – ST



Regular Fix Spring

The testing result from “**Technical Development Center**” in France shows regular Metal Profiles (C-Line), manufactured from second grade or low quality galvanized steel, have screws fastened between plasterboard and C-Line of less than 50% (only 4 out of 10 pieces of screw are fastened, with the remaining coming loose), which can cause the collapse of the ceiling.

Q & A



? The bump on C-Line can make it strong?

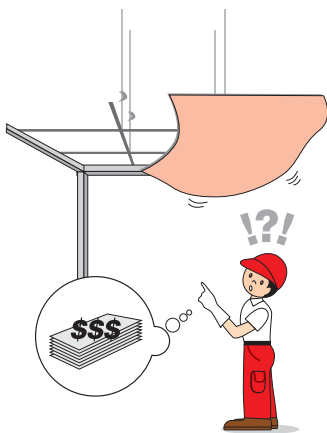
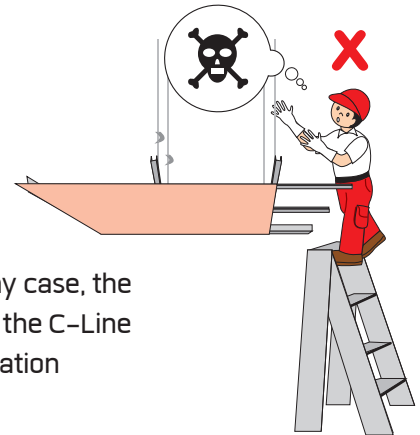


With the right process, the bump can enhance the resistant against bending. The bump must be along the C-Line length and in the right direction in order to be functional.

? What is the required thickness of C-Lines that can support human weight?



A system should have to be tailor-designed for the application. In any case, the loading capacity of a drywall ceiling system does not depend only on the C-Line gauge, but also on the other component parts and the type of installation



? How does reduced thickness of C-Line affect the finished ceiling?



Thinner gauge C-Line is lighter and costs less. However, most C-Line profiles in Thailand have such reduced thicknesses that they do not conform to safety standards. In many cases, we find ceiling deformation, non-flatness, sagging and distorted edges. In addition to being unsightly, there is also the real threat of the ceiling collapsing. And as there are usually no visible warning signs, it is difficult to prevent a ceiling from collapsing. Therefore, it is important to select quality of C-Lines that meet safety standards.

? What factors affect the ceiling's loading capacity?



- Quality metal profiles and other component parts that meet standards and are certified by reliable institutions.
- Thickness of metal profile and other component parts.
- Thickness of zinc coating on galvanized steel of metal profile.
- Spacing of hanging sets, main runner and cross runner of metal profile following designing and testing standard of manufacturer.
- Spacing of each screw affixing gypsum board.
- Quantity of screws that can fasten gypsum board and metal profile together.
- Gross weight of ceiling system and other components.
- Affixing of additional components on ceiling system following standard of manufacturer.

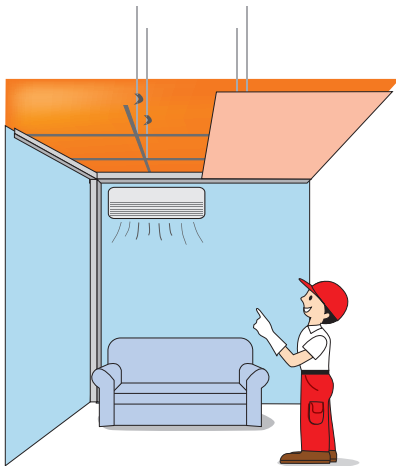
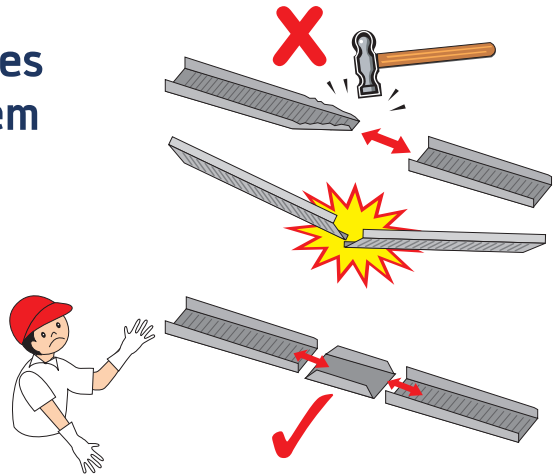


Q & A

? Is it correct to connect metal profiles (C-Lines) together by jamming them into each other and riveting?



It is an incorrect method since this will create the weakest point of the ceiling system. The correct method is to use a connecting clip designed to connect C-Lines together safely.

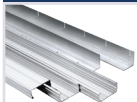


? Why should we be concerned about rust since it is an internal structure of the ceiling and not exposed?



Moisture above the ceiling can easily increase from higher temperature than the room temperature, from hot-water pipes, from smoke absorber and from water leakages. Moisture can cause rusting easier and faster if the metal profiles do not meet corrosion-resistance standards.

Elephant Concealed Ceiling System



Concealed Ceiling Metal Profile Elephant ProLine

- Strong, 5 times safer with high quality 0.52 mm metal.
- High rust resistant.
- Easy to install with range indicator on C-line at every 10 cm.
- Certified TIS 863-2532

ProLine

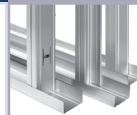


Concealed Ceiling Metal Profile Elephant ProLine Max

- Produced from high quality metal.
- Able to carry the weight up to 100 kg/installing point.
- Compatible with large service system with 3 meters long hanging wire.

ProLine Max

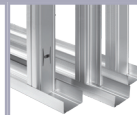
Elephant Partition System



Partition Metal Profile Elephant ProWall

Interior partition metal profile produced with 0.52 mm high quality metal, strong and durable with rust resistant. Certified TIS 863-2532

ProWall



Partition Metal Profile Elephant PlusWall

Economic option for interior partition metal profile produced with 0.40 mm high quality metal, strong and durable with rust resistant

PlusWall



ELEPHANT
Gypsum Board

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