

FREQUENTLY ASKED QUESTIONS

Q: I read ARMADILLO™ 500R (with the ARMADILLO™ pod 500C series) uses a material called “HSC” what is it?

A: HSC is an acronym for High Strength Cardboard. HSC is created by pressure molding of a controlled mix of recycled brown Kraft papers admixed with a special formula of natural resins to provide extra strength and waterproofing.

Q: Does the cardboard deteriorate over the time?

A: The HSC contains a natural waterproofing additive and its special formula has been studied to be very durable, nonetheless in this application the durability of the cardboard once the concrete has cured is irrelevant because it is a sacrificial formwork whose integrity over the time does not prejudice the structural performance of the foundation.

Q: What happens in case insects or rodents attacked the cardboard?

A: There is no evidence of the outcome of attacks to the HSC, nonetheless in this application the HSC is used to make sacrificial formwork whose integrity over the time does not prejudice the structural performance of the foundation.

Q: I read that the ARMADILLO™ 500R is a very strong foundation, how can it be so robust by using cardboard?

A: It is the special shape (and not the material) of the ARMADILLO™ 500 pods that generates the special interwoven pattern of reinforced ribs on which the strength and stiffness of the structure depend.

Q: Does the cardboard of the pods degrade if exposed to rain?

A: The HSC has waterproofing performances and once dried it restores its strength without degrading. To prevent risks associated with heavy rain (and simply to avoid the time to make it dry) it is recommended to always protect the ARMADILLO™ 500 pods with a DPM against the rain.

Q: Does the cardboard of the pods degrade with the moisture of the wet concrete?

A: The HSC has been designed and tested to resist the moisture of the wet concrete without degrading.

Q: How do you prevent from floating the pods when the concrete is poured?

A: The ARMADILLO™ pods and the ARMADILLO™ keystones combined with the rebar and the steel mesh are specifically designed for this purpose.

Q: Because the ARMADILLO™ 500R is re-levelleable foundation does it mean I can place it on every kind of soil?

A: The ARMADILLO™ 500R suits most soils and can be re-levelleable in case of settlements. It is recommended to carry out ground improvement or deep foundation works on soils that might incur settlement in static conditions in order to prevent frequent re-levelling.

Q: May I build an ARMADILLO™ 500R foundation without a specific design?

A: No, the ARMADILLO™ 500R foundation requires a specific design.

Q: I read the ARMADILLO™ 500R foundation needs to be designed or peer review by Cresco Group, is it correct?

A: Yes, it is correct. The ARMADILLO™ 500R is a new foundation system that includes bespoke elements and requires a specific know-how. Cresco Group being the inventor can guarantee the best performance of the foundation system and prevent the unexpected.

Q: What is Cresco?

A: Cresco is considered a leading boutique engineering firm with offices in Europe and in New Zealand. Through the years Cresco has worked for major projects (residential, commercial, nuclear power stations, conventional

power plants, hydropower plants, steel production factories, oil & gas...) in 29 countries. Cresco's research & development team has patented the ARMADILLO™ technology. For further info: www.cresco-group.com

Q: Have any ARMADILLO™ 500R foundations been consented by the Christchurch City Council?

A: Yes

Q: By choosing an ARMADILLO™ 500R foundation may I do without soil improvement or piling works?

A: Generally you can. Only where the ground is prone to significant static settlements under load some additional works might be recommended.

Q: How much does an ARMADILLO™ 500R cost per square meter?

A: The construction costs of an ARMADILLO™ 500R (as well as for any foundation) depend on several factors such as the architectural layout, the loads of the superstructure and the features of the ground. Saying that an ARMADILLO™ 500R generally costs considerably less than other solutions.

Q: I don't need a re-levelleable foundation, is the ARMADILLO™ 500R convenient in other applications?

A: Yes, it is. Every time a strong and stiff shallow base is required the ARMADILLO™ 500R is extremely competitive. Where the re-levelleability is a not required performance the ARMADILLO™ 500R does not include the ARMADILLO™ Jacking Pads 250. By taking advantage to his structural performances you can get a safer base or you can reduce other costs such as: piling (e.g. by reducing their number) or soil improvement works (e.g. by reducing their depth and/or their extension).

Q: Can an ARMADILLO™ 500R foundation be used on deep piles?

A: Yes, either as a re-levelleable type (e.g. substituting the ARMADILLO™ Jacking Pads) or as a simple stiff base (e.g. to reduce the number of piles and provide extra structural strength to the base).

Q: Can the use of an ARMADILLO™ 500R reduce my costs for ground improvement works?

A: Yes, it can. Both the ground improvement depth and extent can be reduced (because the ARMADILLO™ 500R can accommodate large differential settlements and support the entire load off the external footings).

Q: I would like to substitute an existing ring beam foundation type with an ARMADILLO™ 500R, can I maintain the timber floor?

A: Yes, you can. The timber floor can be placed on top of your new ARMADILLO™ 500R. Specific details have been designed for this purpose.

Q: My house is founded on a TC3 soil and needs to be repaired. By using an ARMADILLO™ 500R may I keep the brick veneer and the heavy roof?

A: Yes, you can. The ARMADILLO™ 500R has been specifically designed to be re-levelleable under heavy loads.

Q: My house is founded on a TC3 with expected settlements higher than 100 mm in SLS conditions. May I use an ARMADILLO™ 500R?

A: Yes, you may. An ARMADILLO™ 500R foundation can accommodate settlements much larger than 100 mm.

Q: The ARMADILLO™ 500R does not contain polystyrene, how can it ensure such a good thermal efficiency?

A: The ARMADILLO™ 500R exceeds the building code when the ARMADILLO™ Thermal Bases are used and anyway it complies with it when they are not used. In this latter case the ARMADILLO™ 500R thermal efficiency relies on the reflective properties of the ARMADILLO™ Thermal Bases combined with the air pockets spread throughout the foundation.

Q: How long does it take to re-level a house with an ARMADILLO™ 500R foundation?

A: The re-levelling and repair (including any associated superstructure damage) can be completed within a 4-week period during which the occupants may have to be relocated. We consider a period of 1 week to be sufficient for most of cases though.