

## DIFFERENCE BETWEEN BATCH AND SPIN GALVANISING



### Outline:

At NGI we do both Batch and Spin (Centrifuge) Galvanising. Batch galvanising is the galvanising of medium to large items that are able to be wired onto a jig or slung with chains to allow dipping as a batch in our main 10.5m long kettle. Spin galvanising is used for smaller items which cannot be hung on a jig. The spin kettle at NGI is 1.5m diameter and we dip one spin bucket at a time in the kettle.

### Specifics:

Most items will be dipped in the main kettle on a jig (**Figure 1**) or with chains, unless we are unable to or it is uneconomical to hang these items. This process is called Batch galvanising as items are batched together on a jig and multiple items dipped as one batch. NGI has a 10.5m long x 1.6m wide x 3m deep main kettle.

The quantity of finished items dipped depends on the size and shape of items and the size of jigs and bath. Larger frames are more difficult to dip and give the galvaniser less opportunity to minimise runs and trapped ash. Batch galvanised items require hanging holes or cleats to allow the items to be wired to the jigs. Items will also require vent and drain holes to allow all liquids to drain out and air to vent so that the item can be fully galvanised inside and outside safely. Without hanging the work will have wire marks or chain marks on the surface where we have had to wrap items to dip. **See our website for GAA venting and draining guide.**

For large quantities of smaller items, such as dowel bars, it is far more economical to spin these than to hang them. The spin process has the same pickling process and the same galvanising process with the same Special High Grade Zinc at around 450°C, the difference with a large quantity of small objects is they are pickled in a large bin and then placed in a drum and dipped. As the drum is removed from the molten zinc the drum is spun in to remove excess zinc from the contents of the bucket. (**Figure 2**)

Spin items are in contact with each other and will have touch marks on them. Zinc that is trapped and not expelled by the spinning may pool on items. Flat product has the tendency to stick together causing large un-galvanised surfaces. Generally round items will be mixed with the flat plates to minimise these black spots.

It is also to be noted that the Australian standard allows a thinner coating for spun items

BATCH	GALVANISING	SPIN	GALVANISING
Article thickness	Ave coating thickness minimum	Article thickness	Ave coating thickness minimum
≤ 1.5mm	45µm	< 8mm	35µm
> 1.5 ≤ 3mm	55µm	≥ 8mm	55µm
> 3 ≤ 6mm	70µm		
> 6mm	85µm		

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**Figure 1. – Batch Galvanising**



**Figure 2. – Spin or Centrifuge Galvanising**

