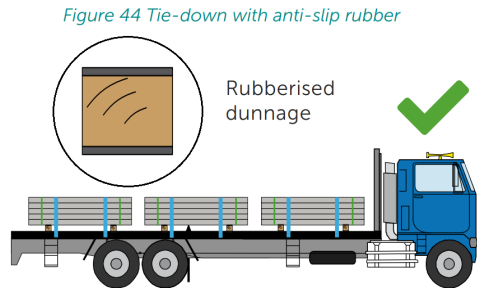
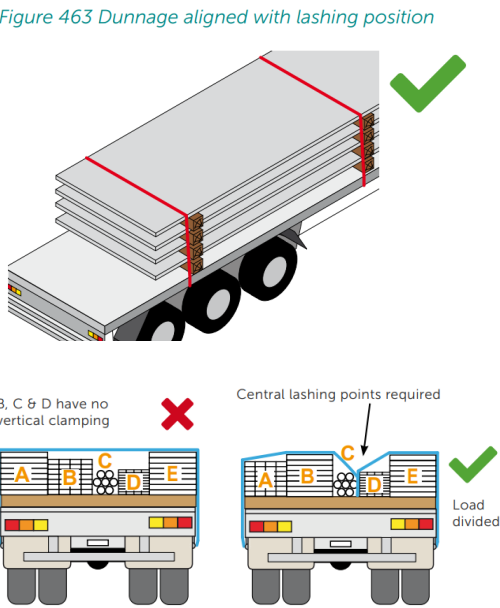
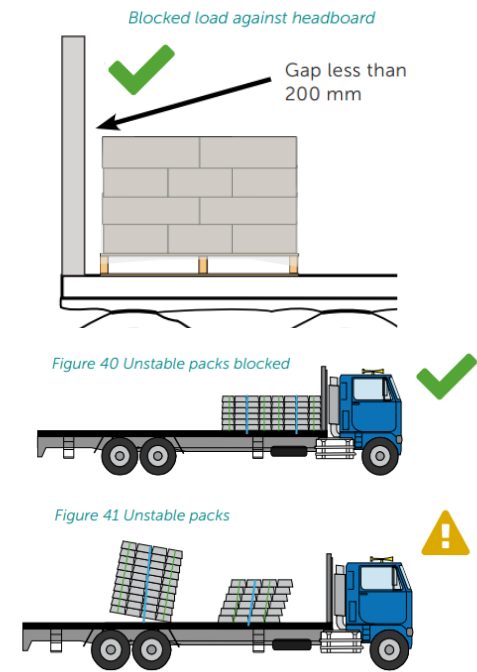


HY QUICK GUIDES

Load Restraint

Quick Guides highlight relevant information to help manage common activities in accordance with HY’s processes.



	APPROX. ANGLE	TIE-DOWN ANGLE EFFECT	TIE-DOWN EFFECTIVENESS
	90°	1.00	100%
	60°	0.85	85%
	45°	0.70	70%
	30°	0.50	50%
	15°	0.25	25%

Blocking – *Placing the load against a body structure or attachment*

- A headboard, side/tail gates, and dunnage can be used to block the load from moving horizontally
- Headboards and side/tail gates must be strong enough to withstand forces likely to be imposed on it (i.e. load rated)

Stability – *Preventing load from tipping forwards or sideways*

- Loads are more likely to tip sideways if the width is less than 50% of its height
- Tall loads are more likely to tip over if the length is less than 80% of its height
- Increase stability of loads by blocking against the headboard, strapping items together to form a stable pack, and using chain lashings for heavier loads

Dunnage – *Placed between load and vehicle*

- Dunnage can be used to elevate a load to increase lashing angle, increase load stability, increase friction, and for creating space between loads to enable unloading with materials handling plant using forks
- Dunnage must be as stable as possible to support the load – i.e. placed on its wide edge, placed at right angles, made of rough-sawn hardwood, quantities are sufficient to support the weight of the load

Packing – *Binding loads into packs, stacking on pallets, or loading into stillages*

- Packaging must be strong enough to contain the load and hold its weight
- Packs must be stacked or bundled in such a way to prevent movement of the load
- Additional packaging may be required to prevent items from spearing or sliding out

Friction – *Resistance of one surface sliding across another*

- Friction stops the load from moving forwards, sideways and backwards
- Increase friction by using rough surfaces such as timber dunnage or anti-slip rubber matting between the load and vehicle

Tie-Down – *Clamping the load against the vehicle body structure*

- Lashings (webbing or chain) are more effective when the tie down angle is closer to 90° and secured tightly
- More lashings are required if the load isn’t blocked against a headboard, sidegate or tailgate
- Use enough lashings (based on total weight of load and weight that each lashing can restrain)

Images: NTC Load Restraint Guide, nhvr.com.au

