



Carefully to Carry

Hot rolled steel sheeting

There has, over the years, been an increase in the number of claims made in respect of rust on hot rolled steel products. Many of these claims are for rust caused by fresh water. In the majority of the cases they are not justified and should be strongly resisted.

The product

The most common way to carry hot rolled steel sheeting on ships is in coils, although it is often carried in bundles or in heavier scantling single plate form. The final product, in coil form, will usually have a plate thickness of from 1mm to 5mm in a coil of about 125cm in width. Each coil will weigh between 7 and 15 tonnes depending on the length and thickness of the plating, although coils of up to 30 tonnes are not uncommon.

Packing

Hot rolled steel coils which are destined for sea-borne trades are usually unwrapped and not therefore protected from moisture and the consequent development of rust. They are secured by a number of flat metal strapping bands passed transversely through the eye or core of the coil and by other bands secured round the outer circumference of the coil. In some cases, hot rolled coils are pickled and then oiled for protection, after which they are wrapped in moisture-proofed kraft paper, enfolded in a metal envelope and finally secured with flat metal strapping bands.

Industrial uses

Hot rolled steel coils may either be uncoiled and sheared into short lengths for use in the fabrication industry or processed and re-rolled to produce cold rolled steel sheeting.

Pre-shipment storage

Unwrapped hot rolled steel coils are often stored in the open, uncovered and exposed to the elements. Consequently, it is not unusual for such material to be partly or completely rusty in appearance when it is shipped. Wrapped, hot rolled steel coils, pickled and oiled should be stored in the dry as any rust on the plating is not acceptable.

Hot rolled coils awaiting shipment

Handling damage, often referred to as mechanical damage, frequently occurs during loading and discharging by stevedores. Damage is often caused when the side of the coil is permitted to strike some object which results in the plate edge becoming scored or torn. Damage of this nature is not acceptable to receivers if the plate is intended to be re-rolled and where the edges have been sheared to an ordered width. Buckling or bending of the plate is of less importance as, during de-coiling, rollers will flatten the bent edges except where the affected plating is folded or bent beyond the elasticity of the metal.



“The carrier shall properly and carefully load, handle, stow, carry, keep, care for and discharge the goods carried.”

Hague Rules,
Articles iii, Rule 2

Carefully to Carry Advisory Committee

This report was produced by the Carefully to Carry Committee – the UK P&I Club's advisory committee on cargo matters. The aim of the Carefully to Carry Committee is to reduce claims through contemporaneous advice to the Club's Members through the most efficient means available.

The committee was established in 1961 and has produced many articles on cargoes that cause claims and other cargo related issues such as hold washing, cargo securing, and ventilation.

The quality of advice given has established Carefully to Carry as a key source of guidance for shipowners and ships' officers. In addition, the articles have frequently been the source of expertise in negotiations over the settlement of claims and have also been relied on in court hearings.

In 2002 all articles were revised and published in book form as well as on disk. All articles are also available to Members on the Club website. Visit the Carefully to Carry section in the Loss Prevention area of the Club website www.ukpandi.com for more information, or contact the Loss Prevention Department.



Hot rolled coils awaiting shipment

Another defect is 'telescoping'. This occurs when the plate edges are pushed out of line. If the edges are projecting too far, the chances of additional damage during handling increases.

When lifting coils, the use of chains and wires should be avoided. Only dedicated equipment such as broad braided wire slings and 'C' hooks should be used. Forklift trucks should be fitted with a circular bar prong.

Mill damage

Sometimes, the side edges of plating may be continuously jagged in appearance over a considerable length. This type of defect is not caused by transportation or handling but is a defect that develops during the rolling of the plating in the mill.

Rust

Both before shipment and after delivery, unwrapped hot rolled steel sheeting may spend a considerable time in open storage. The coils may therefore be exposed to rain and possibly to a polluted or salt-laden atmosphere. Free moisture will trickle down the edges of the plating and may penetrate over a limited distance between the laps of the sheeting. It is therefore not unusual for hot rolled steel to appear rusty or partly rusty. A thin film of rust on the surface of the plating caused by contact with fresh water is usually of no consequence since any remaining mill scale, rust or other extraneous matter will be removed by a pickling process before the goods are cold rolled or provided with a protective coating. If, however, the rust is excessive and corrosion pitting is evident then additional surface preparation may be required depending on the depth or extent of the pitting. The time taken for rust damage to become excessive will obviously vary from one area to another but several months of exposure would normally be required before excessive rust is formed.

Loading during rain

Unwrapped hot rolled steel sheeting is frequently stored in the open, both before shipment and after discharge. When it is stowed in the open at the loading port there is little point in refusing to load during short periods of light rain. However caution is advised if the rain is heavy, as free moisture may collect on the tank top and build up at the after end of the compartment, so that some coils may be partially submerged in water. The rainwater may also become contaminated either by salt residues after salt water washing of the hold, or from previous cargoes.

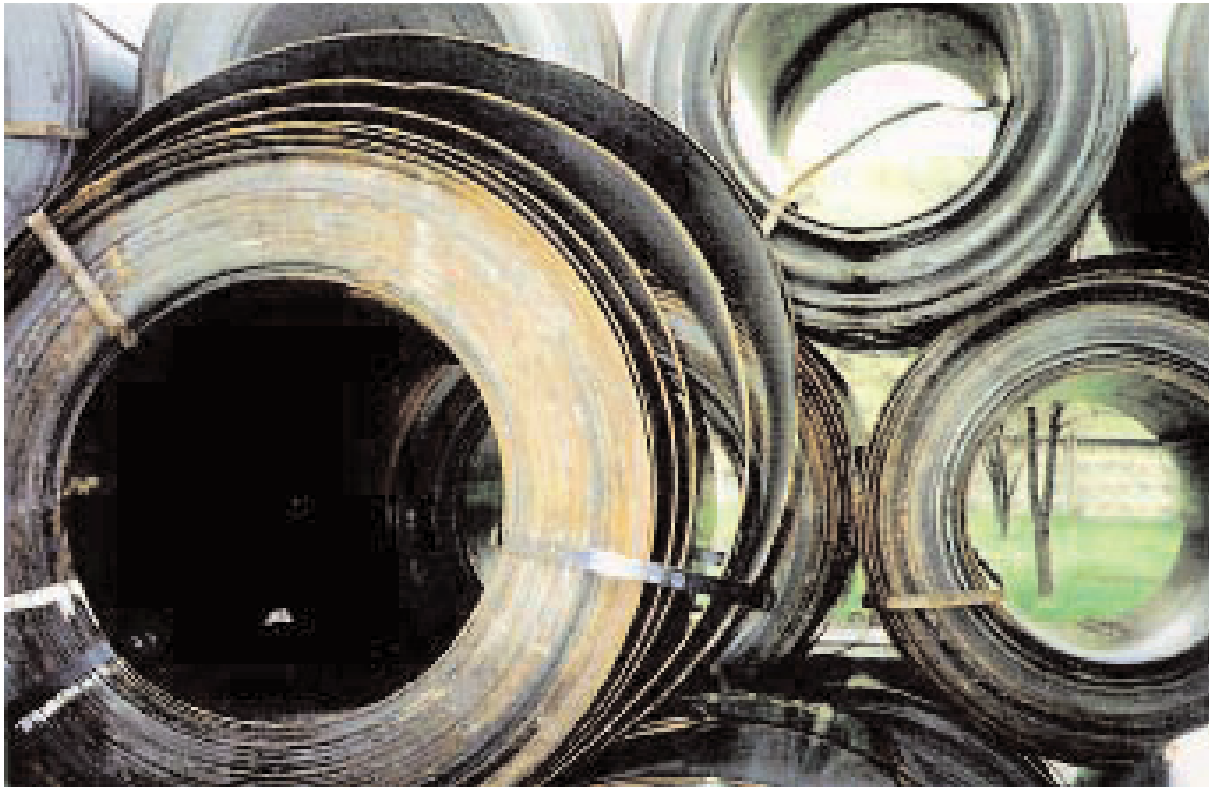
Whether loading during rain should be permitted or not will also depend upon any changes in temperature which are anticipated during the course of the projected voyage.

Consideration should of course also be given to the effect on any other cargo already loaded which might be damaged by rain, either directly, or by the high level of humidity that will be created within the cargo compartments.

In circumstances such as those described, bills of lading should always, in addition to any remarks concerning rust, be claused 'wet before shipment'. If problems arise, advice should be sought from the Association's local correspondents.

Contact with sea water

Sea water has a devastating effect upon steel products and rapidly causes a serious rust condition to develop. If action is taken in time, before corrosion has become firmly established, the rust and chlorides can be removed during the pickling process and the goods can be considered as sound and prime material. On the other hand, if the goods are left for some time before the salt and rust are removed then serious consequence will result. It is therefore of great importance that the master ensures the hatchcovers of his ship are absolutely watertight and that



Coils showing loose and broken strapping bands

the holds are thoroughly cleaned and washed out with fresh water before loading starts. Prior to loading, the coils should be subjected to silver nitrate tests to establish if there is any presence of chlorides on the steel.

Strapping bands

Strapping bands on the coils at the time of shipment should be tight in order to ensure that the goods are delivered in a tightly wound condition. Coils which have slacked off, owing to broken or slipped securing bands, can cause instability of the stow and problems in handling. Difficulties may arise at the mill when uncoiling the material and claims may arise from any disruption of a mill's set programme for loss of production. In addition, stones and grit may penetrate between the turns of plating, causing serious marks to the surface of the steel when the coils are reversed to tighten the loose turns of plating.

Conclusion

It will be clear from the above comments that it is essential to clause mate's receipts and bills of lading with remarks accurately reflecting the condition of hot rolled steel coils. These remarks should correctly record the apparent rust condition, the presence of any chlorides and any mechanical damage. Great care should be taken in the loading, stowage and discharge of this cargo.

During the sea passage, the cargo should be kept in as dry an atmosphere as possible and any necessary ventilation, either mechanical or natural, should be recorded in the deck log book or ventilation record book with air and hold

temperatures and dew points. The surface temperatures of the steel coils themselves should be recorded and the cargo should be ventilated in accordance with psychrometric values. Tests carried out on the watertightness of the hatch-covers and other openings to the holds should be noted as work done in hold cleaning and maintenance records.

It is recommended that a surveyor be appointed at the loading port or ports to survey the cargo prior to loading and assist the master in clausuring mate's receipts and bills of lading. The Association can arrange this, but the master should realise that the appointment of a surveyor does not abrogate any of his responsibilities to care for the cargo. The surveyor should help masters to decide exactly the condition of the steel coils and thereafter the remarks to be inserted on the mate's receipts and bills of lading. If the shippers insist on clean bills of lading they should present coils that are dry and without traces of rust. It should be noted that clausured bills of lading for this type of cargo will not necessarily create any problems with letters of credit.

If all the above precautions are taken, there should be adequate evidence to enable the shipowner to reject any claim for damage by fresh water. It is more difficult to reject allegations of damage by salt water when chlorides are not detected at the time of loading, but are observed at the time of discharge. Accurate records can however help the owner to defend these claims.

Last but not least is the importance of photographs as evidence. Masters, ships' officers and surveyors should always be instructed to take a good set of photographs of any damage at both loading and discharge ports.