CASE 112: “STAINLESS STEEL RUSTING”

1) Are there cases of corrosion of stainless steel?

Yes, simplifying there are two types of different stainless steel:

- Ferrous stainless steel or chrome stainless steel. AISI 430. It is magnetised
- Austenitic stainless steel or Chrome- nickel 18-10. AISI 304. Deep inlay. Sheet austenitic stainless steel is not magnetised. However when deep inlays are made a slight magnetic permeability is produced because austenite turns into martensite and in the damaged a slight magnet attraction is caused(magnetising)

Austenitic stainless steel have a rusting resistance higher than ferrous stainless steel without nickel.

There could be risk of rusting for prick rust spots for the use over the sink of aggressive acids such as hydrochloric acid or its popular versions: nitric acid, bleaches for example to white the clothes or other industrial or domestic cleaning products with chlore without washing the sink soon with plenty of water.
The cause is the loss of pasivation of stainless steel due to the attack of chlore ions active free coming from the aggressive agent. If it is not washed soon firstly rubbing normally and then rinsing rusting is formed which will deep in the stainless steel. If you leave the corrosive agent act very long the effects will be worse.

In extreme cases, rusting could even perforate completely the stainless steel.

The first signs of the beginning of rusting consist of the apparition of greyish stains or brownish- grey stains more localized

Situations in which the sink is not well used:

- When building or repairing buildings, sometimes the different professions place or pour products in the sink and stain the sink with rests of cement, lime, solvents, paintings, etc and use acids to remove them.
- Some people use bleaches or popular acids to clean the sinks or the base units so they damage both the sinks and the base units.
- The maids use the bowls to leave immersed clothes in water with bleach.
- Rusting can be also caused if recipients are leaved open with acids or bleaches inside the base unit under the sink, for the steam action emitted over the reverse of the piece. Rusting would not affect those areas of the reverse of the sink which were protected like the sound deadening pad.

Once rusted, the only way to eliminate it is carrying out a mechanical abrasion of stainless steel (for example with brushes and polishing paste). The deeper the prick rust spots are the more energetic the process must be. If the attack is too deep, the prick rust spots would not have solution and it would be necessary to replace the affected product.

Use advices:

Do not clean the sink with acids or bleaches (they do not make cleaning easier and it is the cause of problems if it is not washed immediately after)
If in some cases the user is forced to use an acid to eliminate rests for example cements of construction adhered, wash the sink at once rubbing normally and rinse it with plenty of water. Limit to the maximum the use of the bowls to keep clothes immersed in bleach. If in some case it was used that way, clean soon the sink rubbing normally and rinsing with plenty of water. Do not keep in the base unit under the sink open recipients with bleaches or acids

2) Which are the basic cleaning advices?

For a normal maintenance, we advise using clean water with soft soap if you desire it. To eliminate rests of tea, coffee and grease you can use a liquid cleaning product (e.g. CIF).

If you used a wool, we would advice to clean following the direction of the material..

Acrylic sinks

The cleaning of these sinks must be done with a cream cleaner; to remove stains applying white vinegar or lemon juice would be enough

Stainless steel sinks

The sink is one of the kitchen elements which gets more dirty and it requires a minimum maintenance in order not to distort it or lose its attractive bright Hereafter we present you a series of practical advices. Stainless steel is an alloy resistant to corrosion. They must rinse and dry at the end of every wash with a cloth in order to avoid water stains and rests of mineral salts. Remove the grease and superficial dirtiness with a dishwasher liquid without diluting it. Never use abrasive cleaners or metal wools in order not to scratch them. To take out bright you can use a specific cleaner for sinks or a stainless steel polishing, rinse and dry.

• For a general maintenance of the sink, we advice give a wipe after every use and use clean cold water with a soft soap.
• If you use a synthetic wool, soft wools are better. Clean always following the material direction.
• To keep always your synthetic sink shining you must apply some vinegar or lemon drops disolved in hot water and rubs with a soft cloth. You can also polish the affected zone with an specific rinse aid.
• Do not leave too long bleach and water in the sink
• Prevent placing soap pieces we use to clean the clothes because they adhere to the surface and as they enter in contact with the lime of the water, they can make the sink stop shining.
•If the surface is damaged to eliminate the imperfections with very soft wet sandpaper and polish the area in order to recover the bright.
▪Do not leave wet wools or cleaning utensils in the sink
▪ Do not use hard bristle brushes to clean the sink.
▪ Always take into account the following outer factors which can damage the sinks:
a) chlorides: Most of the cleaning products have this mineral salt. They can damage the stainless steel, that is why we recommend rinsing after every use.
b) Knives and sharp objects: Despite their extraordinary qualities, stainless steel sinks are not chopping boards.
c) Salt: Be cautious not to introduce in the sink foods with high content in salt.
d) Water quality: Waters with high content in iron, high concentration of minerals or with more calcium carbonate proportion can affect the sink thus we recommend drying the sink after every use and apply weekly a recommended abrasive product.