Information on how to prevent fractures on artificial teeth

To give some insight into the possible causes of fracture-complaints of denture teeth, following is an explanation of the causes and consequences.

There is always the possibility that something went wrong in the procedure of manufacturing the teeth, although this would be a rare exception because:

1. The force porcelain has to endure in Enta's tests is much greater than would ever present itself in the mouth of the patient.
2. During the manufacturing of materials and finished goods, tests are continually being performed, as the ISO/NEN norms and A.D.A. tests suggest.

The information below concerns possible fractures caused by the dental technician, denturist, dentist or patient.

Temperature shock

- If the temperature drops with differences of 70°C in between, it can cause cracks or fractures. The cracks can cause fractures after several days.
- Grinding with grinding material that is too fine or milling with too great a pressure applied.
- Grinding with stones that are too rough or fraise
- Using moderately rough grinding material and letting this spin in red prosthetic wax. The wax works as a cooler and as a lubricant.
- Making the wax denture too hot while working on the prosthetics. Make sure the flame does not affect the teeth.

Shocks

- When taking the prosthesis out of the mould, use a wooden or synthetic hammer rather than a metal one.

Strain

- With thinner prosthetics, especially partial dentures, strains can be caused by bending or distorting.
- By bending the clasps too far or too often, you can cause cracks or fractures in the teeth.

Lever principle

This is by far the biggest cause of fractures and cracks. By imbedding or taking the prosthetic out of the mould incorrectly, you will often cause a lever force, most of the time from palatal or lingual to buccal or labial.

- Imbed the prosthetic twice. That is to say; first pour the plaster to just over the row of elements. After that, isolate it (or use a metal or plastic slide) and fill up the flask.
- Use marbles or other (synthetic!) objects to fill up large spaces *before* you fill it. Because glass or synthetics don't bind with plaster, it will make things easier when taking the prosthetics out of the mould.
- Use flexible material such as Flexistone®. Spread a thin layer across the elements and then plaster. This also gives much cleaner prosthetics. However, do not use too much; it could move the elements.
- If the plaster is too soft, it can cause fracture-complaints, because the plaster could then "bend" instead of coming right off.
- Try clipping in the length of the row of elements. (from distal to mesial)
- The above is extra important with **Solution**®. At tests, Solution appeared to be the strongest brand of all! But even then, with all of the esthetic advantages, Solution is still sensitive to the lever principle.

The patient and fracture complaints

Many fractures of porcelain elements are caused by patients dropping the prosthesis in the sink while brushing them. Advise patients to lay a washing-glove, a rubber mat or something similar in the sink.

Alternative

Porcelain and ceramic will always be sensitive to fractures, no matter what brand. Enta teeth, like most other brands, are well protected against any kind of force in the mouth. Therefore, it is safe to say that most of the time, fractures come to existence with us in the laboratory, the operatory, or at home. Improved pouring-acrylic (in gel) is an excellent preventative. What will always remain is the danger of strains and (temperature) shocks, but with the proper treatment, prosthetics made with porcelain/ceramic elements are a durable, functional and esthetical solution for the patient.