Stressed 12.5 mm. strand slipping - Use and maintenance of barrels and wedges

WHAT HAPPENED

On the 30th October 2018 a member had an incident where a 12.5mm strand, which had been stressed, slipped from a barrel and wedge. No one was seriously injured. The incident particulars are as follows:

• The barrels and wedges had been cleaned and inspected visually as per procedure prior to their use in a stressing operation

• The strand slipped after stressing operations had been completed

• The strand was stressed for an hour before slipping • wire retainers had been placed every 10m as per procedure

• The injured person was approximately 30m down the bed from where the strand slipped from the barrel and wedge.

After sending the barrel and wedge which were involved in this incident for inspection, it was found that the teeth on the wedge had become flattened (see Figure 1).

Whilst the set, in question, had been visually inspected for cracks and broken teeth prior to use, the flattening of the teeth which ultimately caused the strand to slip had not been identified (see Figure 2).

In addition to this only two of the segments of the wedge were in the barrel when stressing took place. When the barrel and wedge were on the loose strand the wedge worked itself away from the barrel and stayed on the strand due to the 'O' ring. As the jack has been pushed up to the grip one wedge segment went to the outside of the barrel with only two segments taking up the load on the strand. The two marks on the tapered side of the barrel indicate where the stressing nose was pressing the wedge teeth into the barrel, leaving the marks (see Figure 3).

Two segments have been known to hold a strand in place. Unfortunately, on this occasion they did not. It can only be put down to human error in ensuring the whole wedge is inside the barrel, which is something that can happen to the most reliable of stressing operators in certain situations.

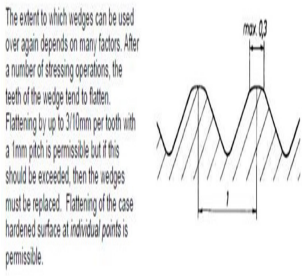


Figure 1



Figure 2

LEARNING POINTS / ACTIONS TAKEN

Ensure the correct cleaning and inspection procedure is adhered to:

• When inspecting the barrels and wedges it must be done in good light, with the aid of a magnifying glass.

• Wire brushes must be used to remove any dirt from the barrels and wedges when cleaning.

• All barrels and wedges must be thoroughly cleaned, examined and lubricated after each use.

• Ensure the site-specific safe system of work procedure for the cleaning of barrels and wedges is followed and the operative doing so is trained and competent in this procedure.

• Any barrels or wedges that are damaged or not fit for use MUST be discarded immediately.

• The daily inspection sheet which is completed after each inspection must contain the number of wedges inspected and the number discarded.

IF ANY DEFECTS ARE FOUND, OR YOU ARE UNSURE IF THE EQUIPMENT IS FIT FOR USE, THEN DO NOT USE IT.



Figure 3

LOCATION:	**CONCRETE PRODUCTS PLANT**	**ALERT STATUS:**	**Normal**
ACTIVITY:	**PRODUCTION AND PROCESSING**	**DATE ISSUED:**	**10/01/2019 11:49:31**
SUB ACTIVITY:	**CONCRETE PRODUCTS**	**INCIDENT No:**	**01502**