

# AVOIDING STRESS CORROSION

**STRESS CORROSION - IS THE PREMATURE OPENING OF THE SCORE PANEL RESULTING FROM SIMULTANEOUS INFLUENCE OF TENSILE STRESS AND A CORROSIVE ENVIRONMENT.**

## CHECK WARMER AND RINSING WATER QUALITY

CHLORIDES <10PPM, SULFATES <15PPM, NITRATES <15PPM. THESE CORROSIVE SALTS, COMBINED WITH MOISTURE, ATTACK THE EXPOSED SCORED AREA OF THE ALUMINUM END.



## BEVERAGE CAN WARMER / PASTEURIZER

\* MUST WARM THE CANS ABOVE DEW POINT TEMPERATURE.  
\* REPLACE WARMER WATER EVERYDAY TO PREVENT BUILD UP OF CORROSIVE SUBSTANCES SULFATES AND CHLORIDES.



## CANS MUST BE DRIED PRIOR TO PACKING

ENSURE RESIDUAL MOISTURE IS REMOVED FROM THE CAN BODY AND END. DO NOT SHRINK WRAP OR PACK CANS WITH VISIBLE MOISTURE.



## KEEP SPACE BETWEEN PALLETS IN THE STORAGE

SPACE BETWEEN PALLETS IS RECOMMENDED FOR DAILY INSPECTION ACCESS.

CANS MUST NOT BE STORED ABOVE 35 C / 100 F AND 60% HUMIDITY.

PROPER VENTILATION IS RECOMMENDED.

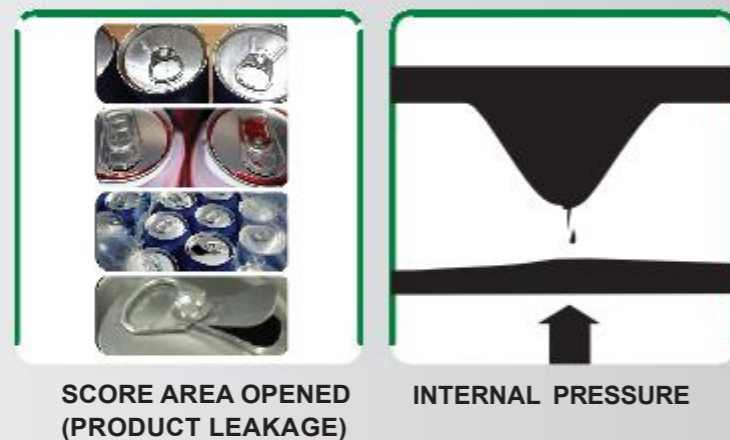


## PRESENCE OF STRESS CORROSION INDICATORS

\* TAB STAINING AND BLOWN/POPPING OF SCORE PANEL.

\* RIVET LEAKING CAN ALSO BE SEEN.

\* LEAKERS CAN BE FOUND FROM SEVERAL DAYS AFTER FILLING.



SCORE AREA OPENED (PRODUCT LEAKAGE)

INTERNAL PRESSURE

## WHAT SHOULD BE DONE IF STRESS CORROSION IS OBSERVED.

\*DO NOT ATTEMPT TO SALVAGE ANY WET CANS.

\*ENSURE PROPER CAN WARMING, RINSING AND DRYING PRACTICES ARE IN PLACE.



## ASSESSING DRYNESS OF THE CAN END, BODY AND BASE

YOU WOULD NEED: ACCURATE BALANCE WITH ERROR MARGIN OF 0.001 GRAMS, AIR TIGHT CONTAINER (SEALABLE POLYETHYLENE BAGS WILL DO) AND SWABS - COTTON WOOL (OR BUDS).

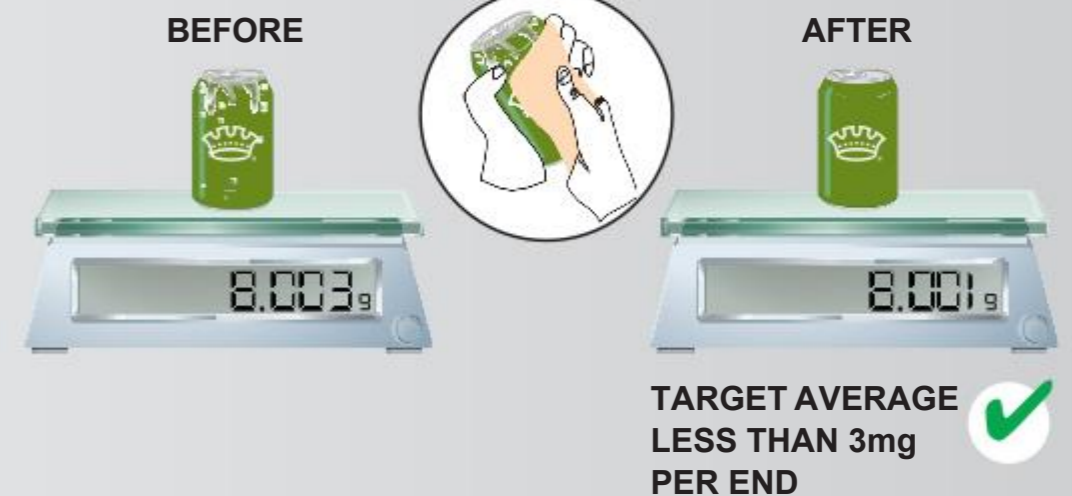
### PROCEDURE\*:

- 1) WEIGH THE SWAB AND THE CONTAINER AND RECORD THE WEIGHT.
- 2) TAKE 4 SAMPLE CANS DIRECTLY AFTER THE DRYER (OR COMBINER CONVEYOR IN CASE OF SPLIT LANE DRYING SYSTEM) AND SWAB THE CAN END IMMEDIATELY.
- 3) PLACE / RESEAL THE SWAB INTO THE CONTAINER AND WEIGH.
- 4) THE WEIGHT DIFFERENCE IS THE AMOUNT OF MOISTURE REMAINING ON THE CAN END AFTER DRYER.

\* NOTE: THIS PROCEDURE IS ALSO APPLICABLE FOR THE BODY AND BASE OF THE CAN.

### STANDARD TO BE ACHIEVED: TARGET-AVERAGE:

- <3mg PER END.
- <20mg PER CAN BODY.
- <6mg PER CAN BASE.



### NOTES:

- \* SAMPLING AND TESTING TIME SHOULD BE KEPT AT MINIMUM.
- \* PREVENT CONTAMINATION ON THE ITEMS TO BE WEIGHED.
- \* THE SWAB SHOULD BE TAKEN OUT OF THE CONTAINER AT MINIMUM TIME BETWEEN TAKING WEIGHTS TO PREVENT MOISTURE PICK UP OR LOSS.
- \* REFERENCES: MPE STRESS CORROSION BOOKLET.

### SAMPLING & TESTING



- CROWN strongly recommends all fillers to use the industry (MPE, ISBT) guidelines to minimize the risk of Stress Corrosion
- CROWN considers that Can and End drying is a critical element of the beverage filling operation.
- The responsibility for adequate Can and End drying rests with the filler.
- Please be advised that CROWN does not warrant aluminum beverage ends against outside-in stress corrosion and will not honor claims resulting from any associated occurrence.

**Stress Corrosion Does Not Occur on DRY ENDS..... Keep It Dry!**