

Product Specification

Item Code:
TP255

Product Name:
Seafood



General:

Seafood is a Timestrip® temperature indicator that shows how long your product has been above a critical refrigerated temperature (3°C/37°F). It is an appropriate control for the hazard of non-proteolytic Clostridium botulinum growth and toxin formation in reduced oxygen packaged (ROP) seafood and will alert the secondary processor and/or consumer that the product may have been exposed to unsafe times and temperatures. It was designed to fall well within the critical border of the Skinner-Larkin curve (see figure 1A).

Inert until activated and self-adhesive, it can be stored at room-temperature then adhered to a product or package when needed (see Appendix 1 for adhesive details). It is single-use and indication is irreversible. It is splash proof, there is an expiration date on each pack shipped and a unique serial number is printed on each indicator for traceability.

How to use:

The indicators are completely inert prior to activation and can be stored at room temperature. To activate the Seafood indicator, fully squeeze the activation button and check that the activation window turns blue and the word ‘On’ appears. If not, re-squeeze the button fully. Within 2-3 minutes of activation, place the indicator at or below 0°C for a minimum of 10 minutes so that the liquid freezes and the indicator is fully conditioned and ready to use. If the product to be monitored is already at or below 0°C then simply apply after activation by removing the adhesive liner on the back. A full coloration of the indication window indicates a potential hazardous exposure to unsafe times and temperatures. In case of none or partial coloration, no action is required as the monitored product has stayed within the appropriate time and temperature curve.

In case of full coloration, the monitored seafood needs to be discarded.

Threshold Temp	Stop temp*	Run-Out window**
+3°C/+37°F	0°C/+32°F	4 Hours

* The temp at which the run-time advancement (the movement of the blue dye) will stop.

** The run-out window is calibrated to an isothermal temp of +2°C above the stated/printed Threshold temp.

I) Performance Specifications:

- Temp Accuracy: $\pm 1^{\circ}\text{C}/2^{\circ}\text{F}$
- Time Accuracy: $\pm 15\%$ in time under isothermal conditions
- Progress Isotherms: See Fig. 1B
- Display: Continuous, irreversible
- Usage:
 - The Seafood indicator can be used on fresh or frozen seafood.
 - The indicator can monitor temperature breaches for up to 1 month.

II) Product Specification:

- Button Position: Button on Top (BOT)
- Colour of Progressing Front: Blue
- Adhesive: DuploCOLL[®] 2353, -40°C to $+100^{\circ}\text{C}$ - See Appendix 1
- Product drawing: See Fig. 2
- Graphics: See Fig. 3
- Remark: Run-time window length will vary slightly between production batches.

III) Product Construction:

The indicator is constructed of polymeric assembly multilayer and aluminium-plastic laminate. It encapsulates coloured liquid chemicals*.

* Maximum weight of colorant is <0.5 mg.

** Liquid chemicals are listed in the Food Chemicals Codex and/or approved by the Food and Drug Administration (FDA) under Title 21, and/or considered generally recognized as safe (GRAS).

*** All materials are non-toxic, latex, silicon and PVC free.

IV) Storage Conditions (un-activated):

- Store indoors, at room temperature up to 30°C .
- Please note that the product can tolerate short term exposure during transit (up to 1 month) to temperatures in the range -30°C to $+55^{\circ}\text{C}$.

V) Shelf-life:

- 2 years – an expiration date is stated on each pack.

Fig1A Boundary for Clostridium botulinum toxin liberation over a range of various storage temperatures as defined by the Skinner and Larkin relationship (Journal of Food Protection. Vol. 61. No. 9. 1998. Pages 1154-1160)

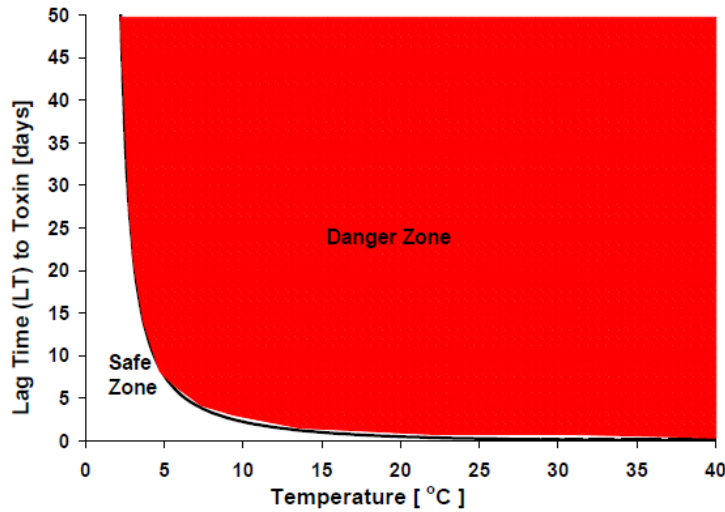


Fig1B Timestrip® Seafood Progress Isotherm

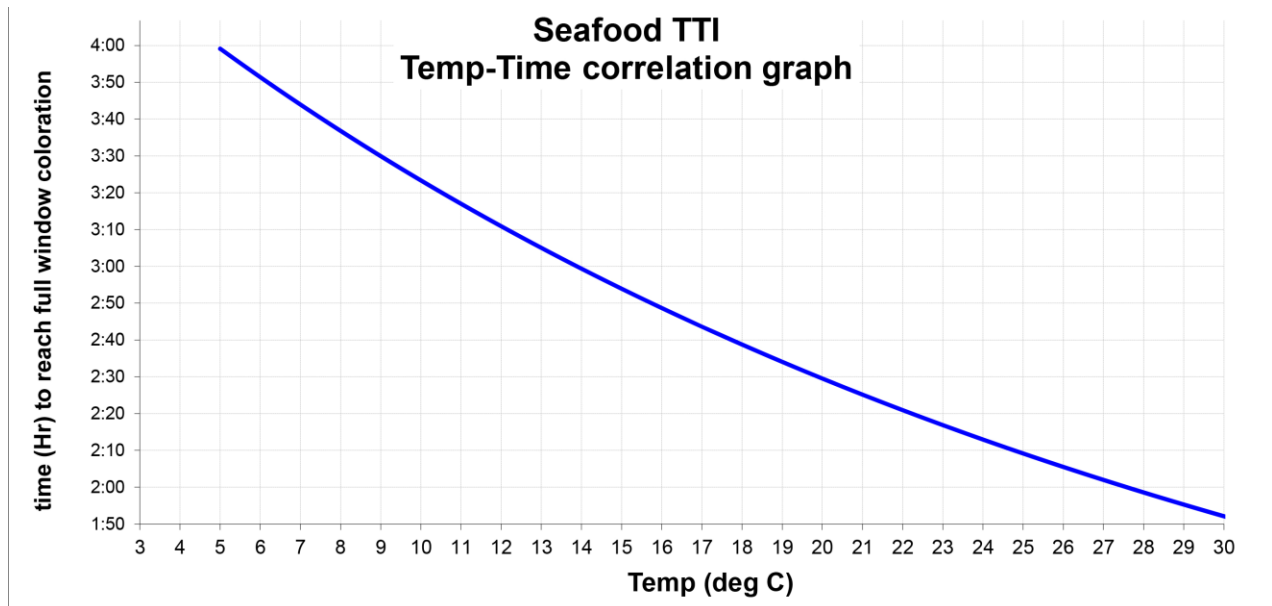


Fig 2: Product Drawing

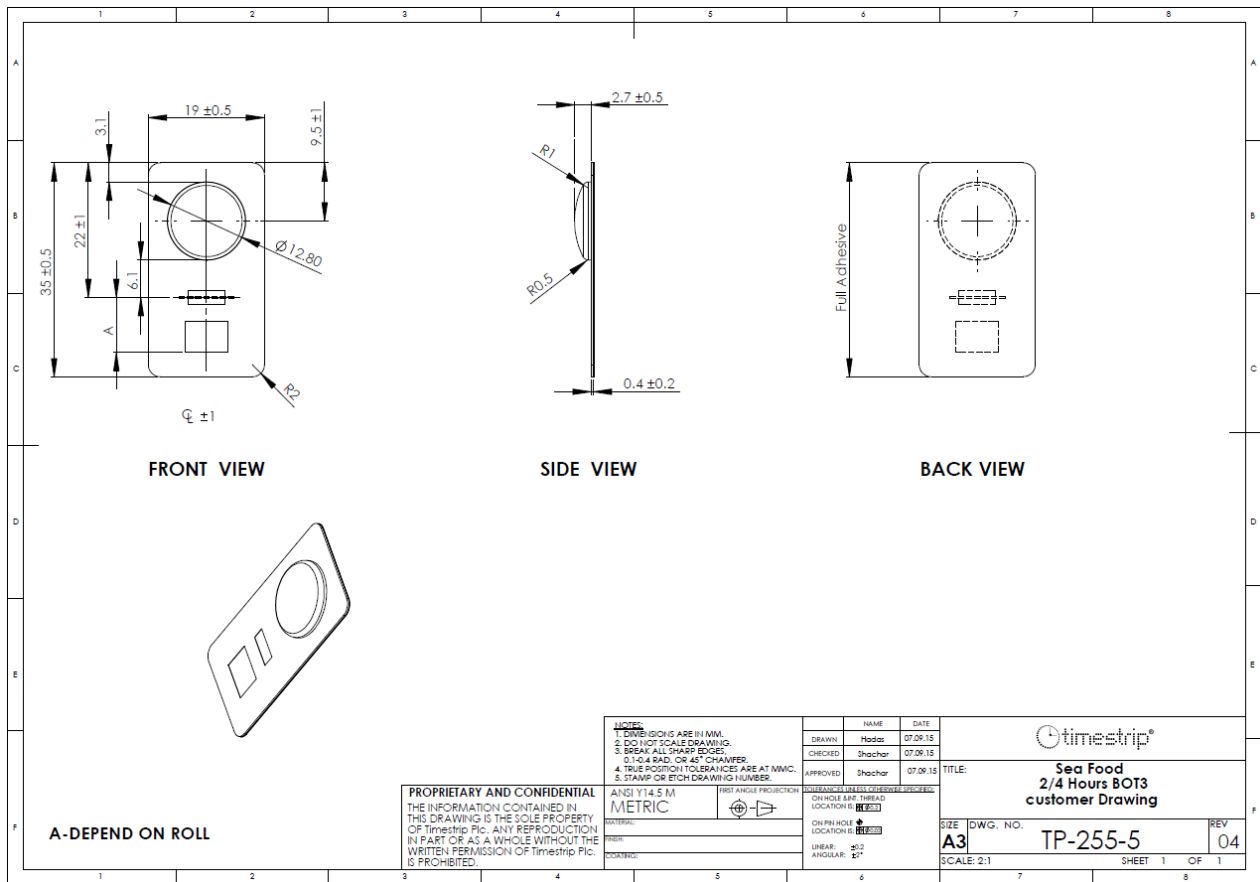


Fig 3: Graphics

Before

After

100%

200%

Pantone 3145 EC ■ TS Pantone 3145 C

P485 ec ■

Pantone 536 EC ■

Pantone Process Blac EC ■

Gradient Pantone 3145 EC&Pantone 2756 EC ■ TS Pantone Process 320 C

TS Pantone 2735 C

***For Approval:**

1. Print out, sign and Fax to +972-9-8991347 or
2. Send a Mail with the approved graphics attached to mail.

Customer approval *			
Name		Graphic Designer: Hadas 22.12.15	
Sign.		Lin. Tolerance:±0.5mm.	
Date		Drawing No.:	
		Printing DWG:	

Title: Seafood
2/4 Hours BOT

Graphic no. 800-255A **Rev. 5**

SH. 1 OF. 1

Appendix 1

DuploCOLL® 2353

Art. No. 11 02 20

Double-sided adhesive tape with special paper carrier

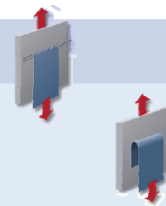
Specific technical data*

Temperature range	-40 °C to +100 °C
Rising heat test in a steel-PET-bond, beginning at 20 °C, increasing temperature every 30 minutes by 10 °C; no loss of adhesion up to	106 °C

* Specific test results, statistically not approved.

Technical Data

Shear strength	on steel according to DIN EN 1943, edition 1996, at +23 °C +/- 2°C	25 N/625 mm ²
Peel strength	on steel according to DIN EN 1939, edition 1996, at +23 °C +/- 2°C	17 N/25 mm



Product features

Initial adhesion ● ● ●
 Final adhesion ● ● ○
 Dimensional stability ● ○ ○
 Adhesion on even surfaces ● ● ●
 Adhesion on rough surfaces ● ● ○
 Ageing resistance ● ● ●
 Weathering resistance ● ● ●
 Chemical resistance ● ● ●
 Resistance to plasticizers ● ● ○

Applicability on

Foam ● ● ○
 Rubber ● ● ○
 Fabric ● ● ●
 Glass/Ceramics ● ● ○
 Wood ● ● ●
 High energy plastics: PVC, PC, ABS,... ● ● ●
 Low energy plastics: PE, PP,... ● ● ○
 Metal ● ● ●
 Paper/Cardboard ● ● ●

● ● ● very suitable ● ● ○ suitable ● ○ ○ suitable with reductions ○ ○ ○ not suitable

Document information

Document Type	Identifying No.	Rev./Issue	Date
Graphics	800-255	05	22.12.15
Product Drawing	TS-255-5	04	07.09.15
Adhesive	DuploCOLL 2353	--	05/2011
Product Specification Sheet	--	05A	20.03.17