

# TECHNICAL SPECIFICATIONS

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## SECTION 341301

### Coca-Cola® BOTTLE

#### PART ONE - GENERAL

##### 1.1 DESCRIPTION

- A) Scope: The contractor shall bear responsibility for all specified material, equipment, and incidentals as well as necessary labor for product assembly
- B) Related Sections:
  - a) Section 061703, Fins
  - b) Section 092305, Duct Tape
  - c) Section 093006, Clay
  - d) Section 063808, Paper

##### 1.2 QUALITY ASSURANCE

- A) Requirements of Regulatory Agencies: Comply with applicable provisions of regulatory agencies below and others having jurisdiction
  - a) Federal Aviation Administration
  - b) Environmental Protection Agency
- B) Reference Standards: Comply with applicable provisions and recommendations of the following except as otherwise stated
  - a) Remove label from bottle

##### 1.3 SUBMITTALS

- A) Shop drawings displaying dimensions and assembly details inclusive of ancillary components

#### 1.4 PRODUCT STORAGE, HANDLING AND DELIVERY

- A) Store in dry and room temperature conditions, as to keep material clean and free from damage
- B) Handle to minimize damage during use
- C) Coca-Cola® Bottle and incorporated items shall be expediently delivered to site to ensure sufficient time for assembly

#### 1.5 JOB CONDITIONS

- A) Protection: Store upright at the end of each day of use to prevent attached components from becoming warped
- B) Inspect for damage after each use and use pressurized air if a dented/misshapen bottle bottom is apparent

#### 1.6 GENERAL REQUIREMENTS

- A) Drawings show the exact arrangement and location of materials to be used in assembly with appropriate measurements
- B) Coca-Cola® Brand bottle should match drawing specifications to  $\pm 0.5$  cm.

### PART TWO - PRODUCTS

#### 2.1 Coca-Cola® BOTTLE

- A) Prefabricated Two Liter Coca-Cola® Brand Bottle
  - a) Material: Polyethylene Terephthalate (PET)
  - b) Weight: 46 g (without cap)
  - c) Length: 32 cm (without cap)

### PART THREE - EXECUTION

#### 3.1 INSPECTION

- A) Examine the surface of the bottle for:
  - a) Dents that could affect the connection between the bottle and attachments
  - b) Punctures on the surface of bottle
  - c) Assemble the attachments only after the bottle has thoroughly been inspected
- B) Material Cleaning: Empty the liquid from the bottle prior

### 3.2 INSTALLATION

- A) Remove bottle label
- B) Remove and discard the bottle cap

### 3.3 CLEANING

- A) Remove all debris, dirt and waste materials resulting from installation
- B) Clean area where duct tape and fin connection is made
- C) Clean area where paper and clay nose cone will be attached

### 3.4 AFTER INSTALLATION

- A) Pressure test bottle systems in conformance to specifications

++ END OF SECTION ++

## SECTION 061703

### FINS

#### PART ONE - GENERAL

##### 1.1 DESCRIPTION

- A) Scope: The contractor shall bear responsibility for all specified material, equipment, and incidentals as well as necessary labor for product assembly
- B) Related Sections:
  - a) Section 341301, Coca-Cola Bottle
  - b) Section 092305, Duct Tape

##### 1.2 QUALITY ASSURANCE

- A) Requirements of Regulatory Agencies: Comply with applicable provisions of regulatory agencies below and others having jurisdiction
  - a) Federal Aviation Administration
  - b) Environmental Protection Agency
- B) Reference Standards: Comply with applicable provisions and recommendations of the following except as otherwise stated

##### 1.3 SUBMITTALS

- A) Shop drawings displaying dimensions and assembly details inclusive of ancillary components

##### 1.4 PRODUCT STORAGE, HANDLING AND DELIVERY

- A) Store in dry and room temperature conditions, as to keep material clean and free from damage

- B) Handle to minimize damage during use

### 1.5 JOB CONDITIONS

- A) Protection: Store on a flat surface to counteract the cardboard developing irregularities

### 1.6 GENERAL REQUIREMENTS

- A) Drawings show the exact arrangement and location of materials to be used in assembly with appropriate measurements
- B) Drawings do not specify the curve used at the end of the fin. This curve must match the dimensions specified, and all fins should be identical.

## PART TWO - PRODUCTS

### 2.1 FINS

- A) Cardboard
  - a) Material: Paperboard and Corrugated Fiberboard
  - b) Mass: 4.2 g

## PART THREE - EXECUTION

### 3.1 INSPECTION

- A) Ensure there is sufficient surface area on the cardboard to be cut
- B) Inspect the surface for the cardboard is to be cut on
- C) Inspect cardboard to be cut to confirm uniformity and check for material irregularities

### 3.2 INSTALLATION

- A) Follow tracing and drawing dimensions
- B) Attach fins at 120 degree separation (with duct tape)
- C) Ensure the cut out fits the contour of the bottle

### 3.3 CLEANING

A) Remove all debris and dirt

### 3.4 AFTER INSTALLATION

A) Not Used

++ END OF SECTION ++

## SECTION 092305

### DUCT TAPE

#### PART ONE - GENERAL

##### 1.1 DESCRIPTION

- A) Scope: The contractor shall bear responsibility for all specified material, equipment, and incidentals as well as necessary labor for product assembly
- B) Related Sections:
  - a) Section 341301, Coca-Cola Bottle
  - b) Section 061703, Fins

##### 1.2 QUALITY ASSURANCE

- A) Requirements of Regulatory Agencies: Comply with applicable provisions of regulatory agencies below and others having jurisdiction
  - a) Federal Aviation Administration
  - b) Environmental Protection Agency
- B) Reference Standards: Comply with applicable provisions and recommendations of the following except as otherwise stated

##### 1.3 SUBMITTALS

- A) Shop drawings displaying dimensions and assembly details inclusive of ancillary components

##### 1.4 PRODUCT STORAGE, HANDLING AND DELIVERY

- A) Not Used



## 1.5 JOB CONDITIONS

- A) Not Used

## 1.6 GENERAL REQUIREMENTS

- A) Drawings show the exact arrangement and location of materials to be used in assembly with appropriate measurements
- B) Our drawings do not specify the length of each piece of duct tape, as they should be cut based on behavior during application. Pieces should be flush with no more than one 2mm high crease for every 5 cm of duct tape length. Strips of duct tape should be cut into smaller pieces to meet this requirement.

## PART TWO - PRODUCTS

### 2.1 DUCT TAPE

- A) Duct tape
  - a) Material: Duct tape
  - b) Mass: 2.7 g

## PART THREE - EXECUTION

### 3.1 INSPECTION

- A) Not Used

### 3.2 INSTALLATION

- A) Use strips of 2.5 cm wide duct tape to wrap the outer edge of each fin
- B) Use to adhere fins to bottle

### 3.3 CLEANING

- A) Remove all debris and dirt

### 3.4 AFTER INSTALLATION

A) Ensure connection to bottle and fin is secure

++ END OF SECTION ++

## SECTION 093006

### CLAY

#### PART ONE - GENERAL

##### 1.1 DESCRIPTION

A) Scope: The contractor shall bear responsibility for all specified material, equipment, and incidentals as well as necessary labor for product assembly.

B) Related Sections:

a) Section 341301, Coca-Cola Bottle

b) Section 063808, Crumpled Paper

##### 1.2 QUALITY ASSURANCE

A) Requirements of Regulatory Agencies: Comply with applicable provisions of regulatory agencies below and others having jurisdiction

a) Federal Aviation Administration

b) Environmental Protection Agency

B) Reference Standards: Comply with applicable provisions and recommendations of the following except as otherwise stated

##### 1.3 SUBMITTALS

A) Shop drawings displaying dimensions and assembly details inclusive of ancillary components

##### 1.4 PRODUCT STORAGE, HANDLING AND DELIVERY

A) Store in dry and room temperature conditions, as to keep material clean and free from damage

- B) Store yet to be used clay in packaging to keep free from damage

### 1.5 JOB CONDITIONS

- A) Ensure clay stays intact throughout use and application of additional products
- B) Inspect for damage after each day of work

### 1.6 GENERAL REQUIREMENTS

- A) Drawings show the exact arrangement and location of materials to be used in assembly with appropriate measurements
- B) Drawings do not specify clay texture. Clay should be smooth, and no bumps or pits should exceed more than 3 mm from the average surface height.

## PART TWO - PRODUCTS

### 2.1 CLAY

- A) Standardized Grey Clay
  - a) 137 g
  - b) Refer to drawings for specific measurements

## PART THREE - EXECUTION

### 3.1 INSPECTION

- A) Examine clay for any foreign material lodge in packing
- B) Ensure clay is not structurally weak due to environmental conditions

### 3.2 INSTALLATION

- A) Follow measurements outlined in drawings
- B) Attach clay to top of Coca-Cola bottle and over the crumpled paper (as shown in drawings)

C) Ensure clay is properly attached and packed tightly

D) Ensure clay's surface is smooth

### 3.3 CLEANING

A) Remove any dirt and debris

### 3.4 AFTER INSTALLATION

A) Not Used

++ END OF SECTION ++

Section 063808

CRUMPLED PAPER

PART ONE - GENERAL

1.1 DESCRIPTION

A) Scope: The contractor shall bear responsibility for all specified material, equipment, and incidentals as well as necessary labor for product assembly.

B) Related Sections:

a) Section 34101, Coca-Cola Bottle

b) Section 093006, Clay

1.2 QUALITY ASSURANCE

A) Requirements of Regulatory Agencies: Comply with applicable provisions of regulatory agencies below and other having jurisdiction

a) Federal Aviation Administration

b) Environmental Protection Agency

B) Reference Standards: Comply with applicable provisions and recommendations of the following except as otherwise stated

1.3 SUBMITTALS

A) Shop drawings displaying dimensions and assembly details inclusive of ancillary components

1.4 PRODUCT STORAGE, HANDLING AND DELIVERY

A) Store paper in climate controlled environment where paper will not become damp and/or wet

- B) Handle with caution ensuring no rips or tears occur

### 1.5 JOB CONDITIONS

- A) Inspect for rips or tears to paper before and after constructive use

### 1.6 GENERAL REQUIREMENTS

- A) Drawings show the exact arrangement and location of materials to be used in assembly with appropriate measurements
- B) Crumpling the construction paper to match provided dimensions will suffice. As clay surrounds the paper, the tolerances of size and exact positioning are not tight.

## PART TWO - PRODUCTS

### 2.1 CRUMPLED PAPER

- A) Standardized paper
  - a) 4.8 g
  - b) Refer to drawings for specific measurements

## PART THREE - EXECUTION

### 3.1 INSPECTION

- A) Examine paper for any rips, tears, or punctures in structure
- B) Ensure paper is not damp and/or wet

### 3.2 INSTALLATION

- A) Follow measurements outlined in drawings
- B) Ensure paper is properly attached to Coca-Cola Bottle
- C) Ensure paper provides adequate room for clay to be attached

### 3.3 CLEANING

- A) Remove any dirt or debris before clay is fitted

### 3.4 AFTER INSTALLATION

A) Not used

++ END OF SECTION ++



SECTION 343910  
BOTTLE ROCKET

PART ONE - GENERAL

1.1 DESCRIPTION

- A) Scope: The contractor shall bear responsibility for all specified material, equipment, and incidentals as well as necessary labor for product assembly.
- B) Related Sections:
- a) Section 341301, Coca-Cola Bottle
  - b) Section 061703, Fins
  - c) Section 092305, Duct Tape
  - d) Section 093006, Clay
  - e) Section 063808, Paper

1.2 QUALITY ASSURANCE

- A) Requirements of Regulatory Agencies: Comply with applicable provisions of regulatory agencies below and others having jurisdiction
- a) Federal Aviation Administration
  - b) Environmental Protection Agency
- B) Reference Standards: Comply with applicable provisions and recommendations of the following except as otherwise stated

1.3 SUBMITTALS

- A) Shop drawings displaying dimensions and assembly details inclusive of ancillary components

#### 1.4 PRODUCT STORAGE, HANDLING AND DELIVERY

- A) Store in dry and room temperature conditions, as to keep material clean and free from damage
- B) Store yet to be used clay in packaging to keep free from damage

#### 1.5 JOB CONDITIONS

- A) Ensure clay stays intact throughout use and application of additional products
- B) Inspect for damage after each day of work

#### 1.6 GENERAL REQUIREMENTS

- A) Drawings show the exact arrangement and location of components to be used in assembly with appropriate measurements
- B) As assembly materials are not specified in the drawings, please refer to *Specification\_DuctTape* for fin assembly and *Specification\_Clay* for nose-cone assembly.

### PART TWO - PRODUCTS

#### 2.1 COCA-COLA BOTTLE

- A) Prefabricated Two Liter Coca-Cola Brand Bottle
  - a) Material: Polyethylene Terephthalate (PET)
  - b) Weight: 46 g (without cap)
  - c) Length: 32 cm (without cap)

#### 2.2 FINS

- A) Cardboard
  - a) Material: Paperboard and Corrugated Fiberboard
  - b) Mass: 4.2 g

#### 2.3 DUCT TAPE

A) Duct tape

a) Material: Duct tape

b) Mass: 2.7 g

2.4 CLAY

A) Standardized Grey Clay

a) 137 g

b) Refer to drawings for specific measurements

2.5 CRUMPLED PAPER

A) Standardized paper

a) 4.8 g

b) Refer to drawings for specific measurements

PART THREE - EXECUTION

3.1 INSPECTION

A) Not Used

3.2 INSTALLATION

A) Follow instructions outlined in drawings

B) Attach fins to the bottle (where specified)

C) Apply duct tape to the all connections at 120 degree separation

D) Rest the crumpled paper where specified

E) Attach clay securely to bottle on top of the crumpled paper

3.3 Cleaning

A) Clean any debris impeding connections between components

3.4 AFTER INSTALLATION

A) Check all component connections are secure

++ END OF SECTION ++