(MR26)
USDA COMMODITY REQUIREMENTS
MILLED RICE AND FORTIFIED MILLED RICE
FOR USE IN
INTERNATIONAL FOOD ASSISTANCE PROGRAMS

Effective Date: July 13, 2018

USDA is an equal opportunity provider, employer, and lender.
**LIST OF ABBREVIATIONS AND ACRONYMS**

Below is an Abbreviations Key to the numerous specialized acronyms and abbreviations used in this reference material.

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ASTM</td>
<td>American Society for Testing and Materials</td>
</tr>
<tr>
<td>Cfu</td>
<td>Colony-forming unit</td>
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<tr>
<td>COA</td>
<td>Certificate of Analysis</td>
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<tr>
<td>CONEG</td>
<td>Coalition of Northeast Governors</td>
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<tr>
<td>CRD</td>
<td>Commodity Requirements Document</td>
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<tr>
<td>FAS</td>
<td>Foreign Agricultural Service</td>
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<tr>
<td>FDA</td>
<td>Food and Drug Administration</td>
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<tr>
<td>FGIS</td>
<td>Federal Grain Inspection Service</td>
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<tr>
<td>FPAC</td>
<td>Farm Production and Conservation</td>
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<tr>
<td>G</td>
<td>Gram</td>
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<tr>
<td>GMP</td>
<td>Good Manufacturing Practices</td>
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<tr>
<td>HACCP</td>
<td>Hazard Analysis and Critical Control Point</td>
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<td>ISO</td>
<td>International Organization for Standardization</td>
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<tr>
<td>IU</td>
<td>International Units</td>
</tr>
<tr>
<td>LMR</td>
<td>Language Marking Requirement</td>
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<tr>
<td>Mcg</td>
<td>Microgram</td>
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<tr>
<td>MG</td>
<td>Milligram</td>
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<tr>
<td>SMR</td>
<td>Standard Marking Requirement</td>
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<tr>
<td>TAPPI</td>
<td>Technical Association of the Pulp and Paper Industry</td>
</tr>
<tr>
<td>USAID</td>
<td>United States Agency for International Development</td>
</tr>
<tr>
<td>USDA</td>
<td>United States Department of Agriculture</td>
</tr>
<tr>
<td>WBSCM</td>
<td>Web Based Supply Chain Management System</td>
</tr>
</tbody>
</table>
CONTACT INFORMATION
Kansas City Commodity Office (KCCO), International Procurement Division (IPD)
Telephone: 816-926-6707 (During Normal Business Hours)

Mailing Address:
UNITED STATES DEPARTMENT OF AGRICULTURE
Attention: Agricultural Marketing Service
International Commodity Procurement Division
MAILSTOP 8738
P.O. Box 419205
Kansas City, MO 64141-6205

Express Delivery:
UNITED STATES DEPARTMENT OF AGRICULTURE
Attention: Agricultural Marketing Service
International Commodity Procurement Division
MAILSTOP 8738
2312 East Bannister Road
Kansas City, MO 64131-3011

Web-Based Supply Chain Management (WBSCM)
WBSCM Helpdesk Level 1-Technical Issues
Phone: 877-WBSCM-4U or 877-927-2648 (During Normal Business Hours)
Or Email: WBSCM.servicedesk@caci.com

FSA Level 2 Help Desk – Functional Issues (i.e., New Vendor, Bid, Invoice Issues…)
Phone: 816-823-4249 or Email: FSAWBSCMServiceRequest@kcc.usda.gov
Normal hours of operation are 7:00 am to 4:30 pm Central Time

USDA Website:
http://www.usda.gov/wps/portal/usda/usdahome

First time, Registered Users Only:
Service Desk email address is WBSCM.servicedesk@caci.com.
On the Log-in prompt enter your email address for both the User ID and Password (all lower case for password) fields, and then change your password when prompted.
If you have any questions, please contact the WBSCM Service Desk at:
Phone: 877-WBSCM-4U or 877-927-2648 or Email: WBSCM.servicedesk@caci.com
PRODUCT DESCRIPTION
Fortified Milled Rice is a blend of milled rice and fortified rice-shaped kernels or rice kernels that are coated in a micronutrient-premix. Both types of kernels are designed to match the size, shape, color, texture and density of regular milled rice (medium or long grain). The fortification technologies used in production (extrusion or coating) preserve micronutrient content even if the rice is rinsed before cooking, a common practice where rice is consumed. Fortified Milled Rice is packaged in 50kg.

COMMODITY SPECIFICATIONS
1.1 COMMODITY SPECIFICATION

A. For the purpose of this specification, the following definitions apply:1
   1. Fortificant: chemical form of added micronutrients
   2. Micronutrient premix: fortificant mix ready for use directly in rice fortification
   3. Fortified Kernels: rice grains fortified with the micronutrient premix
   4. Traditional Milled Rice: polished rice packaged at the rice mills
   5. Fortified rice: Traditional Milled Rice combined with micronutrient premix or the fortified kernels.

B. The Government will accept offers for long or medium grain milled rice for fortification. The rice shall meet the specifications of the class and grade offered, as defined in the “Official United States Standards for Rice,” in effect at the time the solicitation for offers is issued.
   1. The milled rice may include any of the following, which shall be specifically stated in the solicitation:
      I. U.S. #5 or better with a maximum of 20 percent broken kernels;
      II. U.S. #3 or better with a maximum of 15 percent broken kernels; or
      III. U.S. #2 or better with a maximum of 7 percent broken kernels.

C. Final fortified rice shall be pre-blended with traditional milled rice, such that no modifications to customary rice preparation and cooking method will be required. The fortified kernels shall be thoroughly blended with the milled rice to ensure a uniform distribution throughout.

D. Offers for parboiled rice will be accepted when specifically stated in the solicitation. No specialty rice, including but not limited to aromatic rice, shall be acceptable unless specified in the solicitation.

E. Fortified kernels shall be sourced from U.S. companies, producing such micronutrient-premixes in the U.S. and using domestic raw material/ingredients, unless such ingredients are deemed to be unavailable, in which case waivers shall be granted, in accordance to U.S. food aid procurement guidelines.

F. The Government will accept delivery of rice grading better than the specified contract grade, but:
   1. No adjustment in contract price will be made for rice grading better than the contract grade.
   2. No substitution of one class of rice for another class of rice will be allowed after a contract has been awarded.

3. If the rice-premix is being achieved using the coating technology, the rice-based carrier grains to produce the fortified milled rice should meet a minimum grade of U.S. #2 or better. The standards are available at: [http://www.gipsa.usda.gov/fgis/standards/ricestandards.pdf](http://www.gipsa.usda.gov/fgis/standards/ricestandards.pdf)

4. Dusting technology should not be used, as the resulting fortified rice would not withstand pre-washing, a step in the cooking process in many of the target countries where the fortified rice will be used.

5. Offers for parboiled rice will be accepted when specifically stated in the solicitation. No specialty rice, including but not limited to aromatic rice, will be acceptable unless specified in the solicitation.

1.2 FORTIFICATION

A. When the solicitation calls for Fortified Milled Rice, the following requirements apply:

1. The fortificant-mix shall be added to a rice-based carrier to form the fortified kernels. Two technologies for rice fortification are acceptable: Extrusion and Coating. Regardless of the kernel technology used, the payload of micronutrients in fortified kernels must take into account any loss during final preparation and cooking, as well as latest evidence on loss during shelflife.

2. If the rice fortificant premix is manufactured using coating technology, the rice-based carrier fortificant grains to produce the fortified milled rice shall meet a minimum grade of U.S. #2 or better.

3. Other food grade additives may be included in the micronutrient premix formulation so long as they do not impart a different flavor or appearance that would detract from the end product acceptability. The fortified kernels shall not present any significant organoleptic (i.e., texture, taste, color, or appearance) differentiation that would be unappealing to the average consumer.

4. Fortified rice blend shall come pre-blended with traditional rice, with no modifications to traditional rice preparation and cooking required. Fortified rice shall withstand final preparation processing (i.e., pre-washing, heat, high moisture, agitation, etc.) without compromising the functionality of encapsulated or extruded fortified kernels.

B. The fortified rice shall achieve the minimum levels of micronutrients shown in Table 1.
Table 1. Target Levels of Micronutrients and Suggested Chemical Forms in Fortified Milled Rice per Gram of Fortified Kernels (or per 100 grams of Finished Product)

<table>
<thead>
<tr>
<th>Micronutrient</th>
<th>Analytical Target/ gram of Premix²</th>
<th>Recommended Chemical Form³</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vitamin A (Retinol Equivalent)</td>
<td>500 IU</td>
<td>Micro-encapsulated Vitamin A Palmitate ⁴</td>
</tr>
<tr>
<td>Vitamin B1</td>
<td>0.5 mg</td>
<td>Thiamine Mononitrate</td>
</tr>
<tr>
<td>Vitamin B3</td>
<td>7.0 mg</td>
<td>Niacinamide</td>
</tr>
<tr>
<td>Vitamin B6</td>
<td>0.60 mg</td>
<td>Pyridoxine Hydrochloride</td>
</tr>
<tr>
<td>Folic Acid (as Dietary Folate Requirements)</td>
<td>0.13 mg</td>
<td>Folic Acid</td>
</tr>
<tr>
<td>Vitamin B12</td>
<td>1 mcg</td>
<td>Vitamin B12 0.1% WS</td>
</tr>
<tr>
<td>Iron</td>
<td>4.0 mg</td>
<td>Micronized Ferric Pyrophosphate, or other food grade iron forms if same or better bioavailability can be demonstrated</td>
</tr>
<tr>
<td>Zinc</td>
<td>6.0 mg</td>
<td>Zinc Oxide</td>
</tr>
<tr>
<td>Carrier and binding agents</td>
<td>Report usage in formulation</td>
<td>Must be GRAS-approved and must not interfere with bioavailability of micronutrients</td>
</tr>
<tr>
<td>Fortification Ratio⁵</td>
<td>1:100⁶</td>
<td>The dilution factor should be adjusted to optimum payload to allow for the best sensorial characteristics and a homogenous distribution of the fortificant</td>
</tr>
</tbody>
</table>

C. The government reserves the right to perform verification testing for all micronutrients specified in Section 1.2.C. Table 1, but will routinely test for only Vitamin A and Iron if the contractor submits a Certificate of Analysis for the rice premix which indicates the appropriate level of all micronutrients specified in Table 1.

² Levels shown are target levels unless otherwise specified in the solicitation. Alternative levels may be specified in individual solicitations based on the national and beneficiary consumption level of rice, nutritional needs and regulatory requirements in the destination country. The target levels (or those in the solicitation, if different from Table 1) shall be guaranteed at the end of 24-month shelf life at 30°C (86°F), supported by appropriate data from uncooked samples. Appropriate overages should be used to compensate for potency loss over the shelf life period due to storage and packaging conditions.

³ Alternative forms will only be acceptable when they can be formulated and appropriately demonstrated to achieve equivalent bioavailability to the recommended chemical form.

⁴ The selection of the product formulation (oily Vitamin A, spray dried Vitamin A, encapsulated Vitamin A in a beadlet) depends on the fortified kernels and the technology to produce them. The producer of the fortified kernels (either fortified by coating or extrusion technology) shall ensure that the vitamin A loss during storage at 30°C 65% relative humidity is below 5% per month. However, accumulated variation around the mean of Vitamin A allowed from the moment of production up to one year of storage under the specified conditions should not be less than 20% or over 40%.

⁵ A plus and minus 15% variation is allowed, assuming a blending ratio of one grain of fortified kernel per each 100 grains of unfortified rice (1:100). Values should be the result of pulling composite samples throughout production lots.

⁶ Kernel producers can provide feedback on alternative ratios but it must be approved by contracting agencies.
1.3 QUALITY ASSURANCE

A. Food Safety and Quality Standards

1. Applicable food safety and quality standard for fortified kernels and final fortified rice include but are not limited to:
   I. Compliance with the U.S. Food and Drug Administration (FDA) Regulations including 21 CFR 137.350, Enriched Rice and the Food Safety Modernization Act (FSMA)
   II. Compliance with FSSC22000 a recognized Global Food Safety Initiative (GFSI) Auditing Standard
   III. General principles for addition of essential nutrients to foods: CAC/GL 09-1987 (amended 1991) of the CodexAlimentarius
   IV. Recommended International Code of Practice General Principles of Food Hygiene CAC/RCP 1-1969, Rev. 4-2003

B. Fortified Rice

1. The processor shall provide a certificate certifying that the proper amount of fortified kernel was added to the shipment to meet the specification requirements.

2. Copies of the original COAs of the fortified kernel, the blending validation description from the fortified rice supplier, and microbiology, as well as contaminants analysis, shall be submitted as part of the invoice package.

C. Auditing

1. The fortified kernel and fortified rice vendor shall agree to allow USDA Food Safety/Quality Inspectors to visit the factory without prior notice during any period when USDA/USAID product is being manufactured, to check that the GMP and HACCP systems are in place.

D. Microbiology and Contaminants

1. Fortified rice suppliers shall provide microbiological test results which shall not exceed the following levels in the finished product:
Table 2: Limit of Microorganisms and Contaminants in Fortified Rice

<table>
<thead>
<tr>
<th>Microbiological Test</th>
<th>IC/SU</th>
<th>n</th>
<th>c</th>
<th>M</th>
<th>M</th>
<th>Report Unit</th>
<th>Ref. Methods</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yeasts and molds</td>
<td>I/10</td>
<td>5</td>
<td>2</td>
<td>100</td>
<td>10,000</td>
<td>/g</td>
<td>ICC No 146 AACC 42-50</td>
</tr>
<tr>
<td>Aflatoxin B1, B2, G1 and G2. (ppb)</td>
<td>1/10</td>
<td>1</td>
<td>0</td>
<td>10</td>
<td>10</td>
<td>/g</td>
<td>AACC 45-16</td>
</tr>
<tr>
<td>Arsenic (Inorganic)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0.2 mg/kg – Finished Product</td>
<td>AOAC 986.15</td>
</tr>
</tbody>
</table>

**Annotations:**
IC: Whether the testing sample is individual (I) or composite (c)
SU: Sample Units
n: Number of sub-samples to be examined
c: Number of acceptable sample units between m and M
m: maximum of cfc of the organism per gram that are of no concern
M: Maximum allowable number of microorganism (cfu) per gram in any one sub-sample.
Any sub-sample with a number above M causes the rejection of the lot under consideration.

1.4 FUMIGATION
A. No more than ten (10) days prior to packaging, the milled rice and fortified milled rice shall be fumigated in a quantity and manner which will affect a kill in all stages of weevil or other insect infestation.

B. The Contractor shall submit with his invoice for payment a statement certifying that the rice was fumigated in accordance with this requirement.

C. Shelf Life
   Considering the lengthy supply chain for fortified rice intended to be used in international nutrition programs, the expected best used by date is twenty-four (24) months from the date of packaging7.

1.5 INSPECTION
A. The contractor shall be responsible for arranging and obtaining Federal Grain Inspection Service (FGIS), or any other organization designated by FGIS, official domestic and export weight and grade certificates.
   Procedures to follow, additional information and points of contact for these services may be obtained at: [http://www.gipsa.usda.gov/fgis/insp_weigh/ricestandsvc.html](http://www.gipsa.usda.gov/fgis/insp_weigh/ricestandsvc.html). Contractors are required to notify the Government immediately of lots that fail to meet contract requirements.

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7 The shelf life reference in this specification (24 months) is based on the food safety and overall quality of the milled rice, not on the shelf life of added micronutrients. Micronutrient payload in fortified kernels must take into account any corresponding dosage of micronutrients to offset any losses during cooking, preparation and throughout the supply chain. Ongoing effort/evidence regarding packaging and micronutrient stability is being gathered to more accurately quantify shelf-life of micronutrients.
B. The average net weight of the sampled shipping units as determined by FGIS shall not be less than 98 percent of the marked net weight. Failure of the lot to meet the average net weight requirement shall cause rejection of the involved lot pursuant to FAR clause 52.212-4(a). (Contract Terms and Conditions—Commercial Items).

C. If the product fails to meet contract specifications on one or more factors on the first inspection, the Contractor may arrange with FGIS for subsequent inspections of the commodity. The inspections may be conducted at origin or a subsequent point of delivery if the provisions of Title 7 CFR 868.50 through 868.63, with respect to retest, appeal, and new inspections can be met. When subsequent inspections of the product are made, the results of the last inspection will be used as the basis for payment under the contract.

D. FGIS will perform a condition of container examination in accordance with the United States Standards for Condition of Food Containers (7 CFR Part 42) and the Agricultural Marketing Service Handbook for Inspection of the Condition of Food Containers.

E. For Fortified Milled Rice, FGIS will include the statement “This Milled Rice is Fortified”, in the results section of the inspection certificate.

F. For Fortified Milled Rice, the contractor shall perform product testing and analysis to ensure that the product meets the micronutrient requirements specified in 1.2.C. Table 1. The result of the contractor’s testing shall be evidenced by:
   1. Certificate of Analysis of the Micronutrient premix that indicates the level and chemical form for each fortificant.
   2. Certificate of Analysis of the rice-premix that indicates the levels of each micronutrient in the fortificant.
   3. Declaration of coefficient of variation and description of the methodology used to validate the blend.
   4. Copies of the original Certificates of Analysis of the micronutrient premix and the fortificant along with the blending validation description must be submitted as part of the invoice package.

CONTAINER AND PACKAGING REQUIREMENTS

2.1 GENERAL
   This part provides the container specifications and packaging materials requirements to be used for contracts under this Requirements Document.

2.2 CONTAINERS AND MATERIALS
   A. All containers and packaging shall be constructed to meet the requirements of the Food and Drug Administration (FDA) for safe contact with the packaged product. The contractor shall obtain and maintain documentation from the container or packaging material manufacturer to verify that the containers and packaging materials used in this contract were in compliance with the Government’s regulatory requirements for safe contact with food products as required in the Master Solicitation, Part 3, Section A, Number 3.

   B. Questions concerning the containers and materials should be directed to:
      Mailing Address:
      UNITED STATES DEPARTMENT OF AGRICULTURE
      Attention: Agricultural Marketing Service
      International Commodity Procurement Division
      MAILSTOP 8738
      P.O. Box 419205
      Kansas City, MO 64141-6205
2.3 PACKAGING MATERIAL AND PERFORMANCE REQUIREMENTS

A. The material used for fortified rice packaging must be flexible, puncture and breakage resistant with approximate breathability profile with the following characteristics:\(^8\):
   (1) Water Vapor Transmission Rate (WVTR): 20-50 g/m2/day\(^9\)
   (2) Oxygen Transmission Rate (OTR): 8-1.9 cc/m2/day\(^10\)

B. The fabric shall be finished by coating or other suitable method to prevent slippage. Individual test results shall be 28 degrees or greater (per TAPPI Test Method T-503- OM- 84).

C. The fabric shall accept and retain printing ink, including lot code, barcode, and best used by date, and that will not rub or flake off to a degree where legibility is impaired.

D. The fabric shall be capable of resisting ultraviolet deterioration for a minimum of 200 hours of exposure in a weather meter, when tested in accordance with Test Method 5804- Federal Standard 191, as amended. The fabric shall retain 70 percent of its original minimum tensile strength in each direction, after 200 hours exposure, when tested in accordance with Test Method ASTM D 5034 (Grab Test), as amended.

E. All bags shall be capable of withstanding the following performance tests for impact resistance. Testing shall be conducted at 104 oF (plus or minus 1.8 oF) and 75% relative humidity. Filled bags shall be placed in the conditioned atmosphere for sufficient time before the tests are conducted for the bag materials to come to equilibrium.

F. Ten filled and sealed bags shall each survive a single drop test on the butt and side on a shock machine that produces for each test a velocity change of 195 inches per second using shock duration of .002 seconds, without loss of product when tested in accordance with Test Method ASTM D5276.

G. The material shall be breakage resistant and have a puncture resistance of at least 600 grams from the outside when tested in accordance with Test Method ASTM D1709 (Dart Drop Test, Test Method B).

H. Bags submitted under this performance specification shall conform to all other applicable material, construction, and performance specifications.

I. If the contractor purchases packaging and container ingredients from a foreign country and/or the package and container is manufactured in a foreign country, the package and container SHALL NOT display country of origin labeling. Phrases similar to but not inclusive of, “Made in [Name of Foreign Country]” or “Product of [Name of Foreign Country]” are strictly prohibited.

J. In addition, all containers and packaging materials shall be constructed to comply with the sum concentration levels of lead, cadmium, mercury, and hexavalent chromium addressed by the Coalition of Northeast Governors (CONEG) model legislation. The sum of the concentration levels of lead, cadmium, mercury and/or hexavalent chromium present in any package or packaging component shall not exceed 100 parts per million. Concentration levels shall be determined using American Standard of Testing Materials test methods, as revised, or U.S. Environmental Protection Agency test methods for evaluating solid waste, S-W 846, as revised.

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\(^8\) Both WVTR and OTR for a 14% moisture content product such as fortified rice approximate the WVTR/OTR profile of ethylene vinyl alcohol (EVOH). However, the material must also match puncture and breakage resistance characteristics to limit infestation, as well as the seal ability mechanical and thermodynamic properties which would allow appropriate sealing with current industry capabilities.

\(^9\) Packaging vendors and fortified rice suppliers must work together and identify appropriate packaging films with the appropriate WVTR and OTR, to propose to the Government, taking into account the 14% moisture content, limiting molding, breakage and infestation.
2.4 50-KILOGRAM WOVEN POLYPROPYLENE BAGS
Contractors may utilize woven polypropylene fabric and circular-woven style bags but are not limited to these constructions. If woven poly bags are used, the following is to apply:
A. The color of the fabric shall be white, unless otherwise specified. At the contractor's discretion, it may use fabric containing marker yarns as a means of identifying the manufacturer of the fabric.
B. The polymer in the fabric shall be 100 percent virgin polypropylene with no recycled material. Rework product will be limited to excess material produced during the initial extrusion process and will be limited to the amount produced during normal continuous operation. A system to identify and document this process must be in place for review by the Government's audit personnel.
C. The fabric in an unstressed state shall permit a minimum air flow of 3 cubic feet per minute per square foot and a maximum of 30 cubic feet per minute per square foot, when tested in accordance with ASTM Test Method D737, as amended.
D. The fabric shall be finished by coating or other suitable method to prevent slippage. Individual test results shall be 28 degrees or greater, when tested in accordance with TAPPI Test Method T-503-OM-84. The fabric shall accept and retain printing ink that will not rub or flake off to a degree where legibility is impaired.
E. The fabric shall be capable of resisting ultraviolet deterioration for a minimum of 200 hours of exposure in a weather meter, when tested in accordance with Test Method 5804-Federal Standard 191, as amended. The fabric shall retain 70 percent of its original minimum tensile strength in each direction, after 200 hours exposure, when tested in accordance with Test Method ASTM D 5034 (Grab Test), as amended.
F. Bags may be flat tube or gusseted.
G. Bags may be extrusion coated. Extrusion coated bags shall have the proper number, size and location of micro perforations to achieve the air permeability rate required for product stability and fumigation, as well as filling efficiency.

2.5 SEWING OF BAG SEAMS
A. All bag seams shall be sewn in a manner which prevents the product from leaking through the seams during handling, storage, and distribution.
B. The color of the sewing thread shall be natural or white. The tensile strength of the sewn seams shall not be less than the tensile strength of the fabric in the body of the bag.
C. The top and bottom of the bag shall be heat cut or otherwise finished to prevent fraying or unraveling of the fabric during distribution. The bottom seam shall be constructed in accordance with Federal Standard 751a, SSn-1 Single Turnover, as amended. A minimum of 4 stitches per inch is required.

2.6 PERFORMANCE TEST PROCEDURES
A. All bags shall be capable of withstanding the following performance test for impact resistance.
1. Ten filled and sealed bags shall each survive a single drop test on the butt and side on a shock machine that produces for each test a velocity change of 195 inches per second using a shock duration of .002 seconds without loss of product.
2. Testing shall be conducted under standard temperature (73.4°F plus or minus 1.8°F) and relative humidity (50% plus or minus 2%) conditions.
3. Filled bags shall be placed in the conditioned atmosphere for sufficient time before the tests are conducted for the bag materials to come to equilibrium.
4. Bags submitted under this performance specification shall conform to all other applicable material, construction, and performance specifications.
B. Test Laboratories
The contractor may use any independent or private laboratory that is capable of conducting the performance test for impact resistance described in Section 2.5. However, the Government is aware of only the following domestically located independent or private laboratories that have such capability:

<table>
<thead>
<tr>
<th>Laboratory Name</th>
<th>Address</th>
<th>Phone</th>
<th>Website</th>
</tr>
</thead>
<tbody>
<tr>
<td>Michigan State University</td>
<td>School of Packaging</td>
<td>East Lansing, MI 48824-1223</td>
<td>(517) 355-9580</td>
</tr>
<tr>
<td></td>
<td>130 Packaging Building</td>
<td></td>
<td><a href="http://www.packaging.msu.edu/research/testing_services/">http://www.packaging.msu.edu/research/testing_services/</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Lansmont Corporation</td>
<td>17 Mandeville Court</td>
<td>Monterey, CA 93940</td>
<td>(831) 655-6600</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td><a href="http://www.lansmont.com">www.lansmont.com</a></td>
</tr>
<tr>
<td>Rutgers University</td>
<td>Center for Packaging Science and Engineering</td>
<td>Piscataway, NJ 08854-8029</td>
<td>(732) 445-3224</td>
</tr>
<tr>
<td></td>
<td>Busch Campus</td>
<td></td>
<td><a href="http://catalogs.rutgers.edu/generic/nb-grad_0810/pg24361.html">http://catalogs.rutgers.edu/generic/nb-grad_0810/pg24361.html</a></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ten-E Packaging Services, Inc.</td>
<td>1666 County Road 74 Newport, MN 55055</td>
<td></td>
<td>(651) 459-0671</td>
</tr>
</tbody>
</table>

2.7 TEST FREQUENCY
A. All specified testing shall be performed and documented and all supporting test and quality control documentation shall be retained and made available for review by the Government for a minimum of three years after final payment under the contract.

B. All tests shall be performed when a change in the formulation/design of the fabric is being made. In addition,

1. The slide angle test, the air permeability and the ultraviolet resistance tests shall be performed annually.

2. In addition, the slide angle test shall, as a minimum, be performed in-house for every 10,000 lineal meters of fabric production. Testing performed in-house is not required to be performed under the specified temperature and humidity requirements.

C. The air permeability and ultraviolet resistance tests shall, as a minimum, be performed annually and when a change in the formulation/design of the fabric is being made.

D. The performance test for impact resistance shall be performed when a change in the formulation/design of the fabric is being made.

E. The slide angle test shall, as a minimum, be performed in-house for every 10,000 lineal meters of fabric production. Testing performed in-house is not required to be performed under the specified temperature and humidity requirements. In addition, the slide angle test shall, as a minimum, be performed annually by an outside testing facility and when a change in the formulation/design of the fabric is being made. This testing shall be performed in accordance with all contract requirements, including the specified temperature and humidity.

F. All supporting test and quality control documentation shall be retained and made available for review by the Government for a minimum of three years after final payment under the contract.
MARKING REQUIREMENTS
3.1 MARKINGS
A. The bag shall be marked in the color specified in the markings exhibits. Any markings not shown on the exhibits shall be printed in blue. When printed on the bag, the colors blue and red shall match the Pantone Matching System (PMS) chart numbers 294 and 200, respectively, to the extent practicable.

B. All dimensions are approximate. Unless otherwise specified, all characters shall be in normal block print.

C. The US Flag shall be 7 inches high and 12 3/4 inches in total width, on the back of the applicable bag, see exhibits.

D. The letters USA shall be Universal black (75) oblique, or Helvetica extra bold with 70% scaling and -70 tracking or equivalent to match the style as shown in the exhibits. The letters USA shall be 6 1/2 inches high and 12 1/2 inches in total width. The three stripes adjacent USA shall be 1 1/4 inches high and printed as close to the edges of the bag as possible, not to exceed 1 1/2 inches from any edge.

E. The USAID vertical identity, including the logo, brand name, and tagline, shall be printed in the same style as shown in the markings exhibits, sized approximately 7 1/2 inches high and 9 3/8 inches in total width. The USAID logo shall be 4 1/4 inches in diameter. The USAID brand name shall be 2 inches in height. The tagline “FROM THE AMERICAN PEOPLE” shall be 1/2 inch in height. The USAID vertical identity is available to download at: http://www.usaid.gov/branding/.

F. The USDA logo shall be 5 1/2 inches high and 7 3/4 inches in total width, see exhibits.

G. The commodity name shall be 1 1/2 inch print. Immediately below the commodity name on the front and back panels insert additional commodity description in 5/8 inch print, if applicable. See Exhibit A for appropriate commodity name/additional commodity description that shall be printed on each bag.

H. The net weight, contract number and the statement “NOT TO BE SOLD OR EXCHANGED” shall be 3/4 inch print. The bag dimensions and Standard Marking Requirement (SMR) or Language Marking Requirement (LMR) number shall be 1/2 inch print. The contract number, net weight, and SMR or LMR number shall be at the bottom of the bag, centered. See exhibits.

I. The symbol indicating “USE NO HOOKS” shall be 2 3/4 inches in height. See exhibits.

J. The letters or symbols used in the language markings for LMR-1, LMR-3, LMR4, LMR-5, LMR-7, and LMR-8 should be sized approximately 1 5/8 inches, see exhibits. The language marking for LMR-2 and LMR-6 should be sized to fit as shown in the exhibits.

K. Lot codes unique to each lot offered for inspection shall be legibly marked on each individual primary container and shipping container. Commodity suppliers may use any type of lot coding system provided a unique code is used to identify each lot offered for inspection under contract.
3.2 MARKING DESCRIPTIONS

The Government shall furnish required markings within two business days after the date of the contract. The procurement of containers should be deferred for at least two business days after the date of the contract.

The following standard marking requirements may be requested under the contract:

**Standard Marking Requirement #1 (SMR-1)**
USAID – Distribution
Front: US Flag, the commodity name, the words "NOT TO BE SOLD OR EXCHANGED,” USAID logo, contract number, net weight, dimensions, “SMR-1,” and use no hooks symbol. See exhibit SMR-1, front Back: Identical to front. See exhibit SMR-1, back.

**Standard Marking Requirement #2 (SMR-2)**
FAS - Distribution
Front: USA with stripes, the commodity name, the words "NOT TO BE SOLD OR EXCHANGED,” USDA logo, contract number, net weight, dimensions, “SMR-2”, and use no hooks symbol. See exhibit SMR-2, front. Back: Identical. See exhibit SMR-2, back.

**Standard Marking Requirement #3 (SMR-3)**
USAID – Monetization

**Standard Marking Requirement #4 (SMR-4)**
FAS or USAID - Monetization
Front: USA with stripes, the commodity name, contract number, net weight, dimensions, “SMR-4,” and use no hooks symbol. See exhibit SMR-4, front. Back: Identical. See exhibit SMR-4, back.

**Language Marking Requirement #1 (LMR-1)**
USAID – Distribution for North Korea
Front: US Flag, the commodity name, the words "NOT TO BE SOLD OR EXCHANGED,” USAID logo, contract number, net weight, dimensions, and “LMR-1.”. See exhibit LMR-1, front.
Back: US Flag, the commodity name, North Korean language panel, and “LMR-1” only. See exhibit LMR-1, back.

**Language Marking Requirement #2 (LMR-2)**
USAID – Distribution for Afghanistan, with Pashtu and Dari
Front: US Flag, the commodity name, the words "NOT TO BE SOLD OR EXCHANGED,” USAID logo, contract number, net weight, dimensions, and “LMR-2.” See exhibit LMR-2, front.
Back: US Flag, the commodity name, Pashtu and Dari language panel, and “LMR-2” only. See exhibit LMR-2, back.

**Language Marking Requirement #3 (LMR-3)**
USAID – Distribution for South Africa Region
Front: US Flag, the commodity name, the words "NOT TO BE SOLD OR EXCHANGED,” USAID logo, contract number, net weight, dimensions, and “LMR-3.” See exhibit LMR-3, front.
Back: US Flag, the commodity name, English language panel, and “LMR-3” only. See exhibit LMR-3, back.
Language Marking Requirement #4 (LMR-4)
USAID – Distribution for Iraq with Arabic
Front: US Flag, the commodity name, the words "NOT TO BE SOLD OR EXCHANGED," USAID logo, contract number, net weight, dimensions, and “LMR-4.” See exhibit LMR-4, front.
Back: US Flag, the commodity name, Arabic language panel, and “LMR-4” only. See exhibit LMR-4, back.

Language Marking Requirement #5 (LMR-5)
FAS – Distribution for North Korea
Front: USA with stripes, the commodity name, the words "NOT TO BE SOLD OR EXCHANGED,” USDA logo, contract number, net weight, dimensions, and “LMR-5.” See exhibit LMR-5, front.
Back: USA with stripes, the commodity name, North Korean language panel, and “LMR-5” only. See exhibit LMR-5, back.

Language Marking Requirement #6 (LMR-6)
FAS – Distribution for Afghanistan, with Pashtu and Dari
Front: USA with stripes, the commodity name, the words "NOT TO BE SOLD OR EXCHANGED,” USDA logo, contract number, net weight, dimensions, and “LMR-6.” See exhibit LMR-6, front.
Back: USA with stripes, the commodity name, Pashtu and Dari language panel, and “LMR-6” only. See exhibit LMR-6, back.

Language Marking Requirement #7 (LMR-7)
FAS – Distribution for South Africa Region
Front: USA with stripes, the commodity name, the words "NOT TO BE SOLD OR EXCHANGED,” USDA logo, contract number, net weight, dimensions, and “LMR-7.” See exhibit LMR-7, front.
Back: USA with stripes, the commodity name, English language panel, and “LMR-7” only. See exhibit LMR-7, back.

Language Marking Requirement #8 (LMR-8)
FAS – Distribution for Iraq with Arabic
Front: USA with stripes, the commodity name, the words "NOT TO BE SOLD OR EXCHANGED," USDA logo, contract number, net weight, dimensions, and “LMR-8.” See exhibit LMR-8, front
Back: USA with stripes, the commodity name, Arabic language panel, and “LMR-8” only. See exhibit LMR-8, back.
3.3 EMPTY BAG DIMENSIONS
   A. All bags shall be marked with the empty dimensions as follows:

<table>
<thead>
<tr>
<th>Bag Type</th>
<th>Dimensions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gusseted Bags</td>
<td>Face Width x Gusseted Width x Finished Length</td>
</tr>
<tr>
<td>Flat Tube Bags</td>
<td>Face Width x Finished Length</td>
</tr>
</tbody>
</table>

B. The dimensions shall be printed at the bottom of the bag, centered, see exhibits.

C. The finished size of the circular woven polypropylene bags will be determined by the contractor, unless otherwise specified by the contracting officer.

3.4 CONTAINERS WITH INCORRECT MARKINGS
   A. Any labels, bags, cans, can lids, cases, or any other type of packaging (hereinafter referred to as "containers") displaying incorrect markings may be used under a Government contract provided that the incorrect markings are obliterated and correct markings are applied in a permanent manner with approval of the contracting officer.

B. The appearance of containers in commercial or other channels either filled or unfilled bearing markings identifying the containers as part of a Government contract may cause the Government expense in determining whether commodities have been diverted from authorized use and in answering inquiries. The contractor shall take all necessary action to prevent the appearance in commercial or other channels of containers and container materials bearing any markings required under a Government contract, including those held by the contractor or others; e.g., overruns misprints, etc. The contractor shall ensure that any container from a Government contract that appears in commercial or other channels shall have all markings required under this contract permanently obliterated.
<table>
<thead>
<tr>
<th>Commodity Requirements</th>
<th>Commodity Name</th>
<th>Commodity Requirements</th>
<th>Commodity Name</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bulgur / Soy-Fortified Bulgur (BWSF)</td>
<td>BULGUR</td>
<td>Dry Edible Beans (DEB)</td>
<td>BLACK BEANS</td>
</tr>
<tr>
<td></td>
<td>SOY-FORTIFIED BULGUR</td>
<td></td>
<td>BLACK EYE BEANS</td>
</tr>
<tr>
<td>Buckwheat (BWP)</td>
<td>BUCKWHEAT GROATS</td>
<td></td>
<td>DARK RED KIDNEY BEANS</td>
</tr>
<tr>
<td></td>
<td>BUCKWHEAT GRITS</td>
<td></td>
<td>LIGHT RED KIDNEY BEANS</td>
</tr>
<tr>
<td></td>
<td>BUCKWHEAT GRITS</td>
<td></td>
<td>GARBANZO BEANS</td>
</tr>
<tr>
<td>Bagged Grain (KCBG)</td>
<td>WHEAT</td>
<td></td>
<td>GREAT NORTHERN BEANS</td>
</tr>
<tr>
<td></td>
<td>HARD RED WINTER</td>
<td></td>
<td>PEA BEANS</td>
</tr>
<tr>
<td></td>
<td>WHEAT</td>
<td></td>
<td>PINK BEANS</td>
</tr>
<tr>
<td></td>
<td>SOFT WHITE</td>
<td></td>
<td>PINTO BEANS</td>
</tr>
<tr>
<td></td>
<td>WHEAT</td>
<td></td>
<td>SMALL RED BEANS</td>
</tr>
<tr>
<td></td>
<td>HARD RED SPRING</td>
<td></td>
<td>SMALL WHITE BEANS</td>
</tr>
<tr>
<td></td>
<td>WHEAT</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>NORTHERN SPRING</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SORGHUM</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td>YELLOW CORN</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>YELLOW CORN</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>YELLOW SOYBEANS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Milled Rice (MR)</td>
<td>MILLED RICE LONG GRAIN</td>
<td></td>
<td>LENTILS</td>
</tr>
<tr>
<td></td>
<td>MILLED RICE MEDIUM GRAIN</td>
<td></td>
<td>SPLIT GREEN PEAS</td>
</tr>
<tr>
<td></td>
<td>MILLED RICE PARBOILED</td>
<td></td>
<td>SPLIT YELLOW PEAS</td>
</tr>
<tr>
<td></td>
<td>FORTIFIED MILLED RICE</td>
<td></td>
<td>SMOOTH GREEN DRY</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>SMOOTH YELLOW DRY PEAS</td>
</tr>
<tr>
<td>Wheat Flour/ Bread Flour (WFBF)</td>
<td>FLOUR ALL PURPOSE</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>BREAD FLOUR</td>
<td></td>
<td></td>
</tr>
<tr>
<td>50 KG Polypropylene Bags (KCPBAGS)</td>
<td>WHEAT</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>CORN</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>SORGHUM</td>
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<td></td>
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<tr>
<td></td>
<td>SOYBEANS</td>
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</tr>
<tr>
<td></td>
<td>SOYBEAN MEAL</td>
<td></td>
<td></td>
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</tbody>
</table>
Exhibits SMR-1 through SMR-4 and LMR-1 through LMR-8

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