MEPNN Supplier Scouting Opportunity Synopsis

Section 1: General Information

Scouting Number	2025-016
Item to be Scouted	Tri-layer Heavy Gauge Co-Extrusion Machine Time
Days to be scouted	30
Response Due By	02/14/2025
Description	Tri-layer co-extruded sheet (PP copo/PP GF/ PP copo) in a 4 mm (5/32") gauge suitable for vacuum thermoforming of orthopedic lower extremity brace. Looking to source machine time for runs of the co-extruded sheets.
Notify Requester Immediately	No
State item to be used in	Rhode Island

Section 2: Technical Information

Type of supplier being sought	Manufacturer
Reason	New product startup
Describe the manufacturing processes (elaborate to provide as much detail as possible)	Utilizing an extrusion process will place the sheet product between commodity extruded monolithic sheet produce and thermoplastic prepreg composites that are large batch consolidated. The sheet is to be produced using thermoplastic melt co-extrusion of the two materials. We anticipate that the extrusion process will be setup using a manifold die preceded by a feed block. The team is ready to discuss capabilities, limitations, equipment availability, material testing, and process optimization with the extrusion vendors.
Provide dimensions / size / tolerances / performance specifications for the item	The tri-layer co-extruded sheet should have a final thickness of 5/32 in. (approx. 4 mm). The application does not require a tight tolerance extrusion and +/- 10% on the thickness will be acceptable. A standard extruded sheet size of 4’ x 8’ is acceptable but smaller sizes (down to 32” x 48”) can be considered. The relevant performance metrics are: flexural modulus (approx. 1500 MPa) and Izod impact strength (approx. 70 J/m ASTM D256A).
List required materials needed to make the product, including materials of product components	The tri-layer sheet is designed to be made with the following polymer materials: PP copolymer/PP with Glass Fiber/ PP copolymer. PP impact copolymer could be considered as an alternative to PP copolymer. The core layer is designed to have the same grade of PP but compounded with short glass fiber (%wt. < 40% to be optimized considering processing and mechanical performance).
Are there applicable certification requirements?	No
Are there applicable regulations?	No
Are there any other stndards, requirements, etc.?	Yes
Details	There are no certification requirements at this time. The material will be utilized in a FDA Class I device. The material usage is predicated.
NAICS 1	
NAICS 2	
Additional Technical Comments	The team is open to discuss material selection and procurement with the extrusion vendor to ensure that the appropriate material grades are identified. We anticipate conducting material testing to support the product and process development.

Section 4: Business Information

Estimated potential business volume	Current market size for the USA approximately 4M pounds. Product will be a subset of the market. Approximately 350K custom lower extremity ankle foot orthoses are produced in the USA annually. The pediatric segment is approximately 20 - 25%.
Estimated target price / unit cost information (if unavailable explain)	The current retail price range between commodity thermoplastic extruded sheet suitable as a fabrication coupon and prepreg thermoplastic composites is $21.15 - $51.84 for a 18" x 30" sheet.
When is it needed by?	Six Months
Describe packaging requirements	Shipped to Rhode Island on palettes. Specifics discussed in negotiation.
Where will this item be shipped?	Rhode Island.

Additional Comments

Is there other information you would like to include?	The co-principal investigators in this project have extensive experience in their respective fields. The clinical PI has 44 years of experience in the orthotics and prosthetics market and was the founding chair of the fabrication sciences society of his academy. The process engineering PI has a PhD in mechanical engineering with specialization in polymer processing technologies. He currently works as a plastics engineering faculty member.