

NWI – R4 Meltblowing Trial & Testing Guidelines and Requirements

General Considerations

- Violations of the procedures outlined herein may result in NWI's cancellation of the trial.
- Photographing, recording, or drawing sketches of any machinery or equipment and related processes at NWI Facilities is strictly prohibited. Clients may request permission to document processing (such as spinning), this will be considered by management and shift leaders and granted on a case by case basis.
- NWI reserves the right to conduct tours of all Lab Facilities unless a Client's proprietary information could be detected or discovered by those touring the Facilities. NWI must be notified of Client proprietary information in writing prior to the trial and NWI shall comply with the confidentiality obligations as set out in the fabrication services agreement.
- Samples remaining after trial will be sent via Fedex Freight unless otherwise arranged.

Warranties

NWI provides no guarantees or warranties as to the outcome of trials.

Raw Material Information

Contact: Angelo Corino

Email: acorino@ncsu.edu and copy nonwovens@ncsu.edu

Mobile: 919-337-5377

Required Pre-Trial Polymer Information:

- Specifics of the resin, as clearly as possible (e.g. polypropylene, homo-polymer, MFR, PDI- relative to standard grades, catalyst, co-monomers), and any details of prior experiments with such materials.
- All MSDS, SDS, and other relevant information should be submitted to NWI at least 3 weeks prior to the scheduled trial.
- The melt characteristics of all polymers and additives must be received at least three weeks before the trial. These characteristics include T_m , T_g , viscosity, melt flow index, melt rheology and processing conditions including drying temperatures and conditions, process temperatures and conditions, throughput rates, basis weight, and other characteristics of the webs.

NWI's Analytical labs can determine these characteristics for its normal fees for such a service. If NWI is required to characterize the polymers, the materials must be received at least four weeks prior to the trial.

Shipping Information:

Prior to the shipment of any resin, you must notify NWI. All relevant information about the materials shipped (carrier, materials to be received, delivery date, etc), and the associated trial plans must be sent to:

Contact: Angelo Corino

Email: acorino@ncsu.edu and copy nonwovens@ncsu.edu

Mobile: 919-337-5377

Address for Shipments:

attn. Brad Scroggins

The Nonwovens Institute

Spunbond Lab

1010 Main Campus Drive, 150

Raleigh, NC 27606

Shipments can be received Monday to Friday from 8AM-12PM and 1-5 PM.

Please indicate on delivery papers your company's name and please make sure that the shipment is addressed to Mr. Brad Scroggins. If not properly labeled with the owner during shipping, we cannot guarantee that your material received will be available for your trials.

Please allow sufficient time for the shipment, especially if custom clearance is required. Generally, resins can only be held at NWI up to 2 weeks ahead of the trial.

After trial is complete, resins must be:

- Discarded on client's behalf at client's cost
- Returned to client at client's cost

NWI reserves the right to dispose of any material after a period of two weeks following the trials, in the absence of any other agreements at the client's cost.

Resin Service

Prior arrangements must be made if the client wants to inquire if NWI can supply the base polymers or fibers for trials at least four (4) weeks prior to the trial. Hours and Additional Charges

NWI is open from 8:00 AM to 5:00 PM, and NWI spinning trials run Monday to Friday 9:00 AM - 4:00 PM; warm-up and shut-down not included, (plus 30 minutes for lunch). Clients that set up trial plans that exceed these working hours will be charged time and one-half (1½) for hours worked on trials by NWI staff in excess of eight hours on a particular day.

Operational Considerations

- A detailed trial plan must be developed in discussion with the responsible engineer from NWI at least two (2) weeks prior to trials. Without such a plan, the trial will be canceled.
- Minimum run time is one (1) day

Client Attendance for Trials

If the client wishes to be present at the trial, NWI must be notified in advance and provided with the names and contact information of all individuals who will attend. **All participants must sign the Visitor Waiver Agreement (Appendix F) before the trial start.** If we have not received a signed copy of the “**Visitor Waiver Agreement**” in Appendix E of this document before the trial, we will ask you to sign the forms while you are here before the start of the trial. Please keep in mind that you are visiting a research and pilot facility. You must therefore, comply with all safety rules while on the premises.

NWI personnel will perform all trial work. Client’s employees can be present during the trial, but are required to stay within approved safe zones or in the office away from the equipment. All safety guidelines must be followed by the Client’s employees while in the pilot facility.

NWI staff will prepare the spinpacks required for the trial. Client’s employees cannot be present during this stage of the trial. Beyond the client specification, the details of the equipment and the spin packs are confidential and will not be disclosed under any circumstances.

Non-Analysis

Except as specified by Client and agreed to by NWI, NWI will not perform or permit others to perform any additional test, analysis, or other evaluation of the material for the purpose of determining the chemical character, components, or physical characteristics or the method of manufacture thereof. NWI will not share samples, or any portion thereof, with any third party, without the express permission of Client.

At Client’s request, NWI can provide some basic measurements of denier, basis weight as needed for the trials (Not to exceed 3 samples). Any additional testing will be completed in the analytical lab at additional cost to the client. Please contact Amy Minton aeminton@ncsu.edu in advance to coordinate testing if the trial will require analysis of more than three samples.

Line Configuration/Options	Daily Costs (\$)	
	NWI Member	Non-members
Meltblown – 1.2M Wide Pilot Line		
Meltblowing	6,000 / day	7,500 / day
In-line web-charging	750 / day	1,000 / day
Web charging-client supplied rolls	2,000 / day	2,500 / day
Line set up/clean up	750 / trial	1,000 / trial
Miscellaneous		
Raw materials cost (including purge polymer)		Cost + 20% administrative fee
Expendables (boxes, tubes, etc.)		Cost + 20% administrative fee
Overtime (if requested)		1.5 times the applicable hourly rate
Storage if prior arrangement is made		Actual
Disposal management for resins other than PP		500
Waste water disposal for kiss-roll trials		500
Equipment damage or costs due to incorrect technical information or materials supplied		Actual
Shipping, packing, customs clearance if provided by NWI	Actual Shipment will be "prepaid" and added to the invoice unless otherwise specified by Client	
Cancellation Fees:		
4 weeks and longer: no charge		
2 to 4 weeks: 30% of trial costs		
1 to 2 weeks: 50% of trial costs		
One week or less: 75% of trial costs		









Payment Terms:

- Charges will be in accordance with the Service Agreement (Order Form), Bylaws and if applicable, the Membership Agreement.
- NWI will not exceed the payment amount agreed to in the Order Form without written authorization from the Client.
- Fourteen (14) days before the scheduled trial, the Client's Purchase Order covering the trial must be on file at NWI.
- Invoices will be sent typically one week after trials.
- Final payment is required within 30 days of receipt of invoice from NWI.

Trial Data

NWI will provide run sheets.

All visitors must follow instructions below:

	<p>Stay in the area (ground floor) of pilot facility where your trial is in progress, and public areas.</p>
	<p>Smoking is prohibited within the building and restricted to marked areas outside the building.</p>
	<p>Taking photos, films (usage of mobile phones with cameras), etc. is strictly prohibited unless explicitly granted by management.</p>
 	<ul style="list-style-type: none"> • Use safety glasses while in the pilot lab. • Use hearing protection (you can obtain disposable earplugs from NWI). • Use helmets during construction. Helmets are available on request. • Closed-toed shoes are required • No loose clothing such as ties/scarves that could pose a hazard when near rotating machine parts.
	<p>Be careful at the site of the lab lines. These are working areas: cranes may be used over your head, forklifts are moving material such as resin and machine parts</p>
	<p>The facility can only be visited / used together with NWI staff.</p>
	<p>All information you get from our site, as well as all visible information are proprietary and confidential information – any usage of such information is strictly prohibited.</p>

Appendix F – Visitor Participation Agreement

Visitor has requested permission to be present on the North Carolina State University (“NC State”) campus and to visit the NWI SpunMelt Pilot Facilities (“Facility”). As part of the visit, Visitor will oversee a trial at the Facility (the “activity” herein).

Visitor acknowledges that their presence and participation in the activity at the Facility is for their own personal benefit. Visitor acknowledges that they have voluntarily elected to participate the activity at the Facility, and desires to do so at their own risk. Visitor further agrees to assume responsibility for all damages, losses, and personal injury to others that is partially or completely due to their fault

While at NC State, Visitor understands that they are subject to and will follow all NC State policies, rules and regulations, including those concerning (a) conduct, (b) use of the Facility, (c) environmental safety and health, and (d) intellectual property. There is a safety plan for the Facility, as well as safety instructions, which Visitor agrees to review prior to participating in the activity.

Visitor acknowledges that there are potential risks of injury and even death from participating in the activity at the Facility. Furthermore, Visitor will be responsible for the proper care of all equipment and property used by or entrusted to them. In consideration for being allowed by NC State to use its Facility and participate in the activity, Visitor agrees to assume responsibility for all risks to themselves and their property, and agrees to indemnify and hold harmless NC State, its trustees, officers, employees, and agents from any and all negligence, claims, damages, and liability arising from or related to the Visitor’s activities at the university. Visitor further agrees to accept and assume for themselves, their assigns, executors, and heirs any and all such risks and losses that may occur.

This agreement is given freely in exchange for the valuable learning experience. Visitor acknowledges that they have read and agree to the terms of this Agreement, and understands that this agreement is given in consideration for their participation in the activity.

Visitor Name: _____
[Printed name]

Visitor Signature: _____ Date: _____