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## RO MEMBRANE THIN FILM (TFC) LINE QUESTIONNAIRE

**Company:** **Phone:**  
**Contact:** **Fax:**  
**Address:** **Email:**

Please complete the following information if pertinent to your project.

### Machine General Specifications

**Desired Line Speed (Max.):**

**Required Web Width (Max.):**

**Web Width (Min.):**

**List Substrates:**

**Please list the process sequence**

**Of the major steps in this process,**

**(e.g. unwind-pressoak-airknife-**

**slot die coat- dry- curtain coat-**

**dry-rinse-dry)**



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**Unwind Section**

**Roll O.D. (Max.):**

**Core I.D. (Nom.):**

**Do cores extend beyond material width?**       Yes       No

**If yes how much do they protrude?**

**Core Material:**

**Roll Weight: (Max.):**

**Is Material wet when unwinding?**

**Tension (Max.):**

**Tension (Min.):**

**Is Guiding Required?**       Yes       No

**What type of unwind configuration?**       Shafted       Shaftless



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**Do you want a single Position Unwind?**       **Yes**       **No**

**Do you want a two position Turret Unwind?**       **Yes**       **No**

**What type of splicing?**       **Manual**       **Automatic**

**Is an over lapping splice acceptable?**       **Yes**       **No**

**Is a butt splice required?**       **Yes**       **No**

**Can the material be heat spliced together?**       **Yes**       **No**

**Is non-stop unwinding required?**       **Yes**       **No**

**Is there an interleaf material to be wound  
from the unwinding material?**       **Yes**       **No**

**What is the interleaf Material?**

**Is ConQuip responsible for any material  
roll handling equipment?**       **Yes**       **No**



If yes, please describe.

**Pre-Treat or Pre-Soak Section**

Is there a pre-soak or pre-treat requirement  
before aqueous coating?

Yes       No

Describe the process.

Does this pre-treatment create a hazardous  
environment?

Yes       No

Can the web touch rollers on the treated or  
coated side?

Yes       No       Minimize

**Aqueous ammine or (1<sup>st</sup>) Coating Section**

Coating Method (i.e., dip, slot die, drip cloth etc.):

Does this coating create a hazardous  
environment?

Yes       No



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**Coating thickness (mils) or rate (gsm):**

**Coating Solids (%):**

**Viscosity (cps):**

**Is the coating water or solvent based?**

**Water**

**Solvent**

**If Solvent based, list the solvents.**

**Who is responsible for fluid delivery**

**system at the machine coater?**

**Buyer**

**ConQuip, Inc.**

**If ConQuip is to supply the coater fluid delivery system, describe as best as possible the batch volumes needed and how the coating fluid is brought to the machine.**

**Is there any conditioning required for the Aqueous coating (i.e., heating, filtering etc)?**



**Can the web touch rollers on the treated or coated side?**

**Yes**       **No**       **Minimize**

**Post -Treat After 1<sup>st</sup> Coating Section**

**Is there any post-treat requirement after aqueous coating before Solvent coating?**

**Yes**       **No**

**Does excess fluid need to be removed before the second coating process?**

**Yes**       **No**

**Describe the process. (i.e. air knife, squeegee, vacuum bar, Heating, drying, etc.)**

**What is the dwell time requirement after the Aqueous coating before the next coating?**

**Does this dwell (distance) need to be adjustable:**       **Yes**       **No**

**Can the web touch rollers on the treated or coated side?**

**Yes**       **No**       **Minimize**



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**Solvent or (2nd) Coating Section**

**Coating Method (i.e., dip, slot die, drip cloth etc.):**

**Does this coating create a hazardous environment?**

**Yes**       **No**

**Coating thickness (mils) or rate (gsm):**

**Coating Solids (%):**

**Viscosity (cps):**

**Is the coating water or solvent based?**

**Water**       **Solvent**

**If Solvent based, list the solvents.**

**Who is responsible for fluid delivery system at the machine coater?**

**Buyer**       **ConQuip, Inc.**



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**If ConQuip is to supply the coater fluid delivery system, describe as best as possible the batch volumes needed and how the coating fluid is brought to the machine.**

**Is there any conditioning required for the Aqueous coating (i.e., heating, filtering etc)?**

**Can the web touch rollers on the treated or coated side?**

**Yes**

**No**

**Minimize**

**Post Coating Dryer**

**Dryer Type (i.e. floater, roller, drum):**

**Water and or solvent content upon entry to dryer (%) or (gsm):**

**Final % moisture upon dryer exit:**

**Or rate of moisture removal (gsm)**

**Required time in dryer (minutes):**



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**Required dryer temperature (°F):**

**Allowable web temperature? (°F):**

**Required materials of construction  
(i.e. 304SS, 316SS, Aluminized etc)**

**Can the web touch rollers on the treated or  
coated side?**

**Yes**

**No**

**Minimize**

**Baths and Tanks**

**After the 1<sup>st</sup> dryer list any additional fluid dip  
tanks that are required for additional  
processes like PVA dips, rinse, glycerin dips etc.**

**Can any of these tanks be identical?**

**Who will be responsible for circulation system?**

**Buyer**

**ConQuip, Inc.**



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**Process Tank #1 if needed**

**Is this a soak tank or a spray tank?**

**What is the liquid?**

**What is the pH/Temp/:**

**Allowable materials of construction (wet):**

**Does the fluid height need to be adjustable:**       Yes       No

**Distance the coated side must travel in  
the fluid before it touches a roller:**      ft.

**What is the total length of web in the liquid:**      ft.

**Does this length need to be adjustable:**       Yes       No

**Can the web festoon (zig-zag up and down)  
in the tank?**       Yes       No



**Can the web travel out of the fluid and then  
back into the fluid as it travels up and down?  
(i.e. the upper idlers are above the fluid level)**       Yes       No

**Is there a minimum bend radius for the material**       Yes       No

**Explain any requirements for the fluid flow  
(Does it need to counter flow, etc.)**

**Are there any solvents released in the bath?**       Yes       No

**If so, do they need to be contained (fume hood,  
covers, etc.)?**       Yes       No

**Does the liquid need to be removed from the  
web prior to the next process tank/etc. (air knife,  
squeegee, etc.)?**       Yes       No

**Should the tank design try to either maximize  
or minimize the amount of liquid in the tank?**       Yes       No

**Are there any other requirements of this tank?**



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**Describe any conditioning required for the tank fluid (i.e., heating, recirculation rate and level of filtering, concentration monitoring, rate of make up fluid etc)?**

**Process Tank #2 if needed**

**Is this a soak tank or a spray tank?**

**What is the liquid?**

**What is the pH/Temp/:**

**Allowable materials of construction (wet):**

**Does the fluid height need to be adjustable:**       Yes       No

**Distance the coated side must travel in the fluid before it touches a roller:**      ft.

**What is the total length of web in the liquid:**      ft.



**Does this length need to be adjustable:**  Yes  No

**Can the web festoon (zig-zag up and down)  
in the tank?**  Yes  No

**Can the web travel out of the fluid and then  
back into the fluid as it travels up and down?  
(i.e. the upper idlers are above the fluid level)**  Yes  No

**Is there a minimum bend radius for the material**  Yes  No

**Explain any requirements for the fluid flow  
(Does it need to counter flow, etc.)**

**Are there any solvents released in the bath?**  Yes  No

**If so, do they need to be contained (fume hood,  
covers, etc.)?**  Yes  No

**Does the liquid need to be removed from the  
web prior to the next process tank/etc. (air knife,  
squeegee, etc.)?**  Yes  No



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**Should the tank design try to either maximize or minimize the amount of liquid in the tank?**       Yes       No

**Are there any other requirements of this tank?**

**Describe any conditioning required for the tank fluid (i.e., heating, recirculation rate and level of filtering, concentration monitoring, rate of make up fluid etc)?**

**Process Tank #3 if needed**

**Is this a soak tank or a spray tank?**

**What is the liquid?**

**What is the pH/Temp/:**

**Allowable materials of construction (wet):**

**Does the fluid height need to be adjustable:**       Yes       No





**Does the liquid need to be removed from the web prior to the next process tank/etc. (air knife, squeegee, etc.)?**

Yes       No

**Should the tank design try to either maximize or minimize the amount of liquid in the tank?**

Yes       No

**Are there any other requirements of this tank?**

**Describe any conditioning required for the tank fluid (i.e., heating, recirculation rate and level of filtering, concentration monitoring, rate of make up fluid etc)?**

**Process Tank #4 if needed**

**Is this a soak tank or a spray tank?**

**What is the liquid?**

**What is the pH/Temp/:**



**Allowable materials of construction (wet):**

**Does the fluid height need to be adjustable:**       **Yes**                       **No**

**Distance the coated side must travel in  
the fluid before it touches a roller:**                      **ft.**

**What is the total length of web in the liquid:**                      **ft.**

**Does this length need to be adjustable:**                       **Yes**                       **No**

**Can the web festoon (zig-zag up and down)  
in the tank?**                       **Yes**                       **No**

**Can the web travel out of the fluid and then  
back into the fluid as it travels up and down?  
(i.e. the upper idlers are above the fluid level)**                       **Yes**                       **No**

**Is there a minimum bend radius for the material**                       **Yes**                       **No**

**Explain any requirements for the fluid flow  
(Does it need to counter flow, etc.)**



Are there any solvents released in the bath?  Yes  No

If so, do they need to be contained (fume hood, covers, etc.)?  Yes  No

Does the liquid need to be removed from the web prior to the next process tank/etc. (air knife, squeegee, etc.)?  Yes  No

Should the tank design try to either maximize or minimize the amount of liquid in the tank?  Yes  No

Are there any other requirements of this tank?

Describe any conditioning required for the tank fluid (i.e., heating, recirculation rate and level of filtering, concentration monitoring, rate of make up fluid etc)?



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**Final Dryer**

**Dryer Type (i.e. floater, roller, drum):**

**Water and or solvent content upon  
entry to dryer (%) or (gsm):**

**Final % moisture upon dryer exit:  
Or rate of moisture removal (gsm)**

**Required time in dryer (minutes):**

**Required dryer temperature (°F):**

**Allowable web temperature? (°F):**

**Required materials of construction  
(i.e. 304SS, 316SS, Aluminized etc)**



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**Can the web touch rollers on the treated or coated side?**

**Yes**       **No**       **Minimize**

**Winding**

**Roll O.D. (Max.):**

**Core I.D. (Nom.):**

**Do cores extend beyond material width?**

**Yes**       **No**

**If yes how much do they protrude?**

**Core Material:**

**Roll Weight: (Max.):**

**Is Material wet when winding?**

**Tension (Max.):**

**Tension (Min.):**

**Is Guiding Required?**

**Yes**       **No**



**What type of winder configuration?**       **Shafted**       **Shaftless**

**Do you want a single Position winder ?**       **Yes**       **No**

**Do you want a two position Turret winder?**       **Yes**       **No**

**What type of roll transferring?**       **Manual**       **Automatic**

**Is non-stop winding required?**       **Yes**       **No**

**Is there an interleaf material to be unwound  
into the winding material?**       **Yes**       **No**

**What is the interleaf Material?**

**Is ConQuip responsible for any material  
roll handling equipment?**       **Yes**       **No**

**If yes, please describe.**



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**Other Processes**

**Are there any other processes that are required as part of this project? If so, explain below:**

**Data Collection**

**Please describe the level of automation that you require for process variable data display,  
data collection and storage,**