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# Florida Residential Mixed Paper (RMP) Feasibility Study



## **Prepared By:**

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&

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## **Prepared For:**

Florida Department of Environmental Protection (FDEP)  
Tallahassee, Florida

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Project Number: SW119

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## **Project Background:**

Southern Waste Information eXchange (SWIX), Inc. received funding from the Florida Legislature through Specific Appropriation Line Item No. 1640, Solid Waste Management Trust Fund, Fiscal Year (FY) 2018 - 2019, General Appropriations Act. The SWIX received this funding for the purpose of assisting commercial waste generators in Florida with the identification and implementation of recycling and waste use and reuse opportunities, (Project No. SW119). Authority for this Project is specified in Section 403.704, Florida Statutes (F.S.). Monitoring and auditing guidelines, as related to the Florida Single Audit Act, are specified in the Florida Catalog of State Financial Assistance (CSFA), No. 37.025.

Under the scope of work outlined for FY 2018-2019 SWIX was tasked to work with the Florida Department of Environmental Protection to examine existing Florida paper mills and examine their potential for use of Residential Mixed Paper (RMP). The first component of the analysis is based on the products produced in those mills and their current fiber raw material sources. The second component of this task was to examine what it will take for the existing Florida mills to be able to use significant quantities of RMP. Included in this review is estimated equipment and other needs and ballpark capital costs for retrofitting these facilities. The final component of this task is an examination of how the state of Florida might assist these mills move toward RMP use. The mills and potential to use RMP are documented as an output of this task.

In order to complete components of this Feasibility Study, SWIX retained Bill Moore with Moore & Associates for assistance. Mr. Moore is one of the country's leading experts as it related to fiber markets.

Appendix A contains a copy of a Power Point Presentation for this project.

## Paper Making and Use Capacity in Florida:

The State of Florida currently has ten (10) mainline paper mills and (3) specialty manufacturers that use recovered fiber in their operations. The following is a brief overview of where the mills are located, type of mills, and their end product (see Figure 1 below). The URL listed below links to a Google Map that contains each of the facilities. Appendix B contains Summary Sheets for each of the facilities referenced in this report that have the potential to use mixed paper in some form.

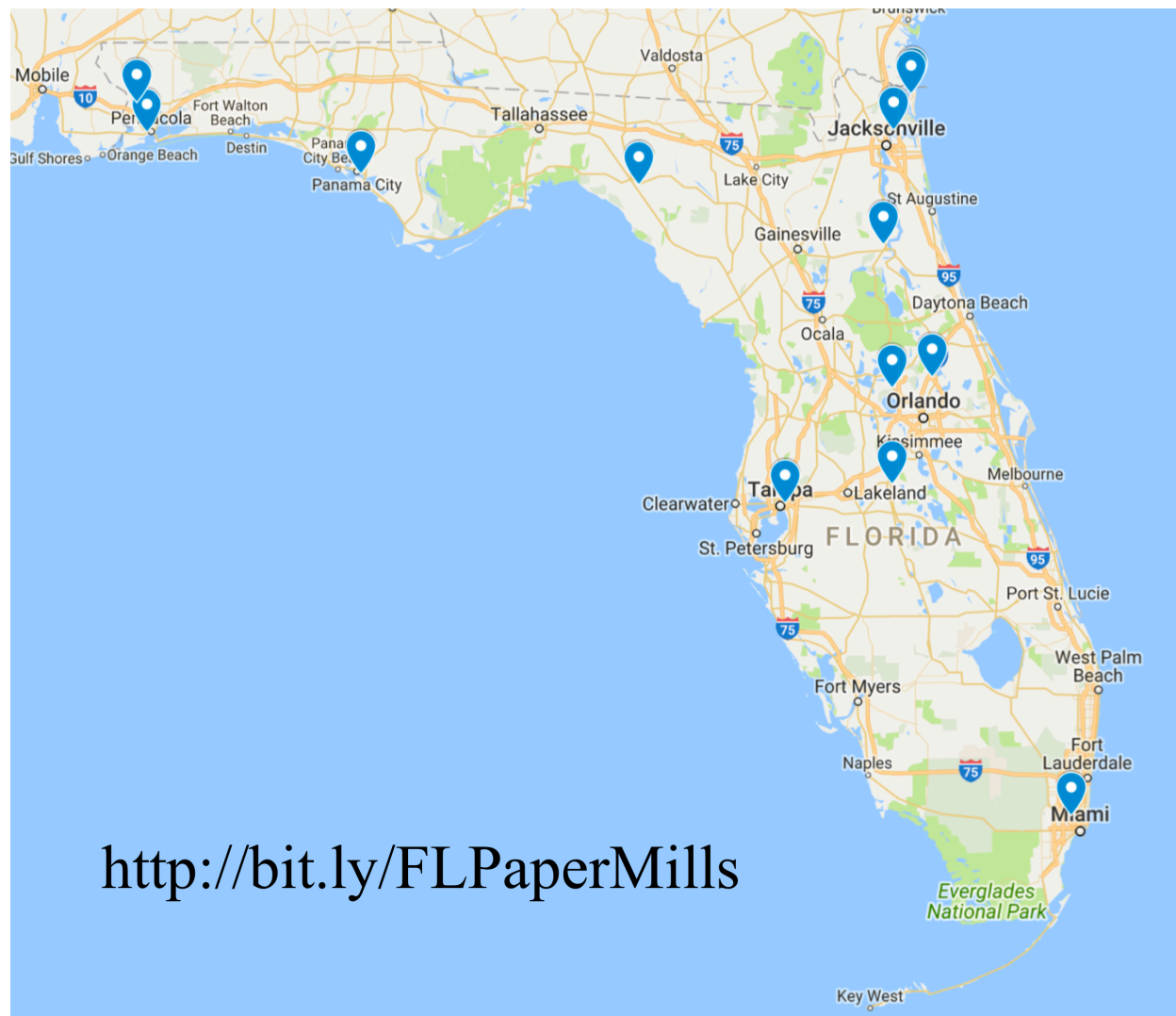


Figure 1: Paper Making and Use Capacity in Florida

### Mainline Paper Mills:

1. Georgia-Pacific, Palatka, Florida [Virgin Fiber Based]
2. GP Cellulose (Georgia-Pacific), Perry, Florida [Virgin Fiber Based]
3. International Paper, Cantonment, Florida [Virgin Fiber Based]

4. Rayonier, Fernandina Beach, Florida [Virgin Fiber Based]
- 5. Resolute, Hialeah, Florida [Recycle Fiber Pulp]**
6. Resolute, Sanford, Florida [Virgin Fiber Based]
7. Sofidel, Haines City, Florida [Virgin Fiber Based]
8. WestRock, Panama City, Florida [Virgin Fiber Based]
- 9. WestRock, Fernandina Beach Florida [Recycle Fiber]**
- 10. WestRock, Jacksonville, Florida [Recycle Fiber]**

Specialty manufactures using recovered fiber:

Ceiling Tile Manufacture:

- Armstrong World Industries, Pensacola, Florida

Molded Fiber Manufacturer (makes egg cartons):

- Zellwin Industries, Zellwood, Florida

Insulation Manufacturer:

- US GreenFiber, LLC, Tampa, Florida

### **RMP Composition Trends:**

In 2017, Florida collected approximately 4.6 million tons and recycled 1.5 million tons (33%) of Old Corrugated Containers, (OCC), Office Paper (OP), and Old News Papers (ONP) combined. Florida's overall paper recycling percentage for these paper type of paper commodities are in-line or greater than other states recycling rates with similar demographics. However, with all the recent news regarding China's and Asia's ban on certain plastics and other potential recycled commodities, there is concern that the paper recycling markets will struggle in Florida and throughout the nation in the near future.



Figure 2: Bales of mixed paper

The following are some recent observations on composition trends from leading experts in the paper recycling industries.

- Generally 20 to 35% Old News Papers (ONP) – Declining – probably getting down to 10 – 15% ultimately
- < 5% to 30 - 40% Old Corrugated Containers (OCC) – Increasing – two types: low OCC version, where screens at the Material Recovery Facility (MRF) pull out as much OCC as possible (currently many MRF's approach) and high OCC version with little to no OCC removed – brown rich, board grade RMP
- 10 to 20% Freesheet – mail, office papers – Declining
- 10 to 15% coated and uncoated mechanical papers – Declining
- 20% other paperboards/boxboards, coated and uncoated – Steady to increasing
- 2 to 10+% Prohibitives (non-paper contaminants) – Averaging 5+% Declining, industry targeting to get to 2%. If making RMP pulp in the United States, probably less emphasis is needed on removing prohibitives at the MRF, do it in the wet phase/stock prep at the mill.
- The prohibitives level in RMP is a major stumbling block to increased use of RMP by the paper industry

### **Toweling Produced in Florida:**

Florida has significant capacity to produce bleached (white) tissue/towel products – four mills:

- Three mills are based solely on virgin fiber:
  - Resolute, Sanford, Florida
  - Georgia-Pacific, Palatka, Florida
  - Sofidel, Haines City, Florida
- One mill uses recycled fiber pulp produced by the company outside of Florida:
  - Resolute – Hialeah, Florida
- There is no brown towel making capacity in Florida
- Brown towel can be partially based on Mixed Paper (MP)
- The nearest brown towel producing mill is Kimberly-Clark in Mobile, Alabama



## Pulping Units:

Paper pulp is a fibrous material prepared by mechanically or chemically separating cellulose from wood or waste paper to produce newspapers, paper towels, magazines and toilet paper. There are various types of pulpers, including broke, hydra, and drum pulpers that are used. Stock preparation such as de-trashing, screening is very important. There are three options (wet lap, air/flash dried, and bailing/roll pulp) for dewatering (drying) pulp. The dewatering process not only decreases the shipping cost, but cuts down on spoilage due to bacteria development.



Figure 3: Fiber Drum Mill

## Potential RMP Users:

The potential RMP use in Florida is fairly small (maximum ~70,000 tons/year) and would be targeted to small domestic specialty product plants/mills. The extensive stock prep systems to use RMP are too costly for most mills and their current supplies of RCP are also expensive and supply volumes are declining (ONP, newsprint, printer grades).

RMP exports (China, Mexico) are an option, but moisture must be less than 15 percent. There is indication that China is looking to build RMP units here in the US (west coast) and have actively pursued in Southeast Asia.

## Siting a RMP Pulp Mill:

The following are discussion points for sitting a RMP Pulp Mill.

### Economic size of a unit:

Minimum – 500 tons/day  
The larger, the better  
1,250 tons/day – Good size

### Existing mill site – best:

Could use some of the output in slush form in one of their existing mills.  
Portion of pulp used at an exiting mill would not have to be dried.



Figure 4: Pulp Mill Roll

### Market for the pulp:

Not enough use for the pulp in or near Florida for economic size recycle pulp mill – but this pulp doesn't have to be dried: wet lap OK, therefore lower cost Pulp must be marketed to China and Mexico – needs to be dried.

## Conclusions:

There are real, but limited opportunities for increased use of RMP at existing paper mills in Florida. There is some, but limited consumption potential for RMP pulp in Florida or nearby states. Best possibility is for increased RMP use or an RMP pulping unit at an existing mill site:

- Slush pulp for use on site;
- Wet lap for close in RMP pulp users;
- Dried RMP pulp for export (China and Mexico);
- One of the existing mill sites would be the most obvious locations for a pulping operation; and
- Molded fiber products would be good potential users of either RMP or RMP pulp.

Brown towel production could be a user of RMP (although primarily based on OCC). There is a movement away from white towel/napkin to brown in the commercial sector (restaurants & offices) as part of a sustainability efforts. The most frequently mentioned barrier to the use of more RMP is the quality, especially the amount of prohibitives in it (non-paper contaminants). The lower the prohibitives, the better, but mills realize there



is a lower practical level and they are used to dealing with contaminants. 2 – 3% prohibitives would be an acceptable level, which is far lower than the typical 5 – 10+%.

### **Recommendations to Encourage More Demand for RMP in Florida:**

- Consider incentives for equipment installations that are related to the use of more RMP;
- Consider purchasing preferences for brown towel use in the state;
- Actively pursue companies that are potential users of RMP;
- Create a plan to assist local government collection programs and MRF operations produce higher quality RMP – primarily to get to lower prohibitive levels;
- Open direct discussions with existing mill companies in the state on their positions on use of RMP generated in Florida. WestRock is an obvious candidate for this. Consider incentives for equipment installations that are related to the use of more RMP;
- Consider purchasing preferences for brown towel use in the state;
- Actively pursue companies that are potential users of RMP;
- Create a plan to assist local government collection programs and MRF operations produce higher quality RMP – primarily to get to lower prohibitive levels;
- Open discussions with Chinese paper mill companies about their interest in siting an RMP based pulp unit in Florida. Explore the potential for RMP and RMP pulp use in Mexico, which can be supplied by existing barge routes between the Florida ports (both east coast and Tampa) and Mexico;
- Prepare an approach to attract more molded fiber plant capacity into Florida – this sector is growing rapidly and some of the in-state demand for products is being supplied from Mexico. This should include discussions with Zellwin;
- Examine ways to increase the use of brown toweling in the state;
- Discuss brown towel production with the existing tissue mills in the state; and
- Assign an FDEP waste reduction program staff to State's existing economic development agency(ies) to help attract more manufacturers of recyclable materials in Florida and recommend Legislative actions for assisting existing recycling businesses to create higher demand for recyclables.

## References:

1. Pulp and Paper Dictionary Online: <https://www.paperonweb.com>
2. RISI Newsletter: <https://www.risiinfo.com>
3. Kadant, Inc.: <https://www.kadant.com>
4. Moore & Associates: <https://marecycle.com>
5. Georgia Pacific: <https://www.gp.com>
6. Resolute Forest Products: <http://www.resolutefp.com>
7. Zellwin Farm Company: <http://www.zellwin.com>
8. Armstrong Industries: <http://www.armstrong.com>
9. US Greenfiber: <https://www.greenfiber.com>
10. WestRock: <https://www.westrock.com>
11. Sofidel: <http://www.sofidel.com>
12. International Paper: <http://www.internationalpaper.com>
13. Rayonier Advanced Materials: <https://rayonieram.com>
14. International Molded Fiber Association: <https://www.imfa.org>

**Appendices:**

Appendix A: Florida Residential Mixed Paper (RMP) Analysis:  
Final Report Power Point Presentation

Appendix B: Facility Summary Sheets

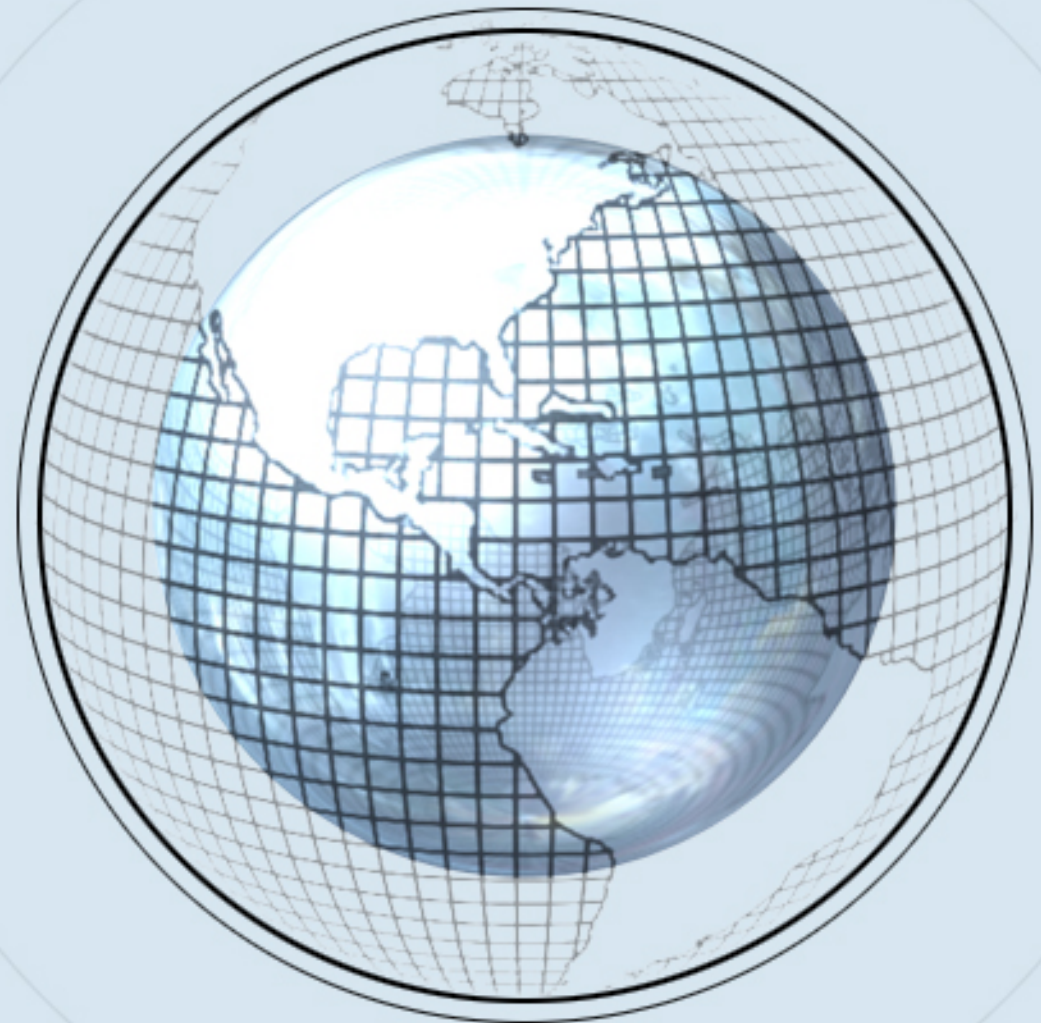
Appendix A:  
Florida Residential Mixed Paper (RMP) Analysis:  
Final Report Power Point Presentation

# Florida Residential Mixed Paper (RMP) Analysis: Final Report

**Prepared by:**

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**August 2018**



Prepared For:

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**Florida Department of Environmental  
Protection (FDEP)**

**&**

**Southern Waste Information  
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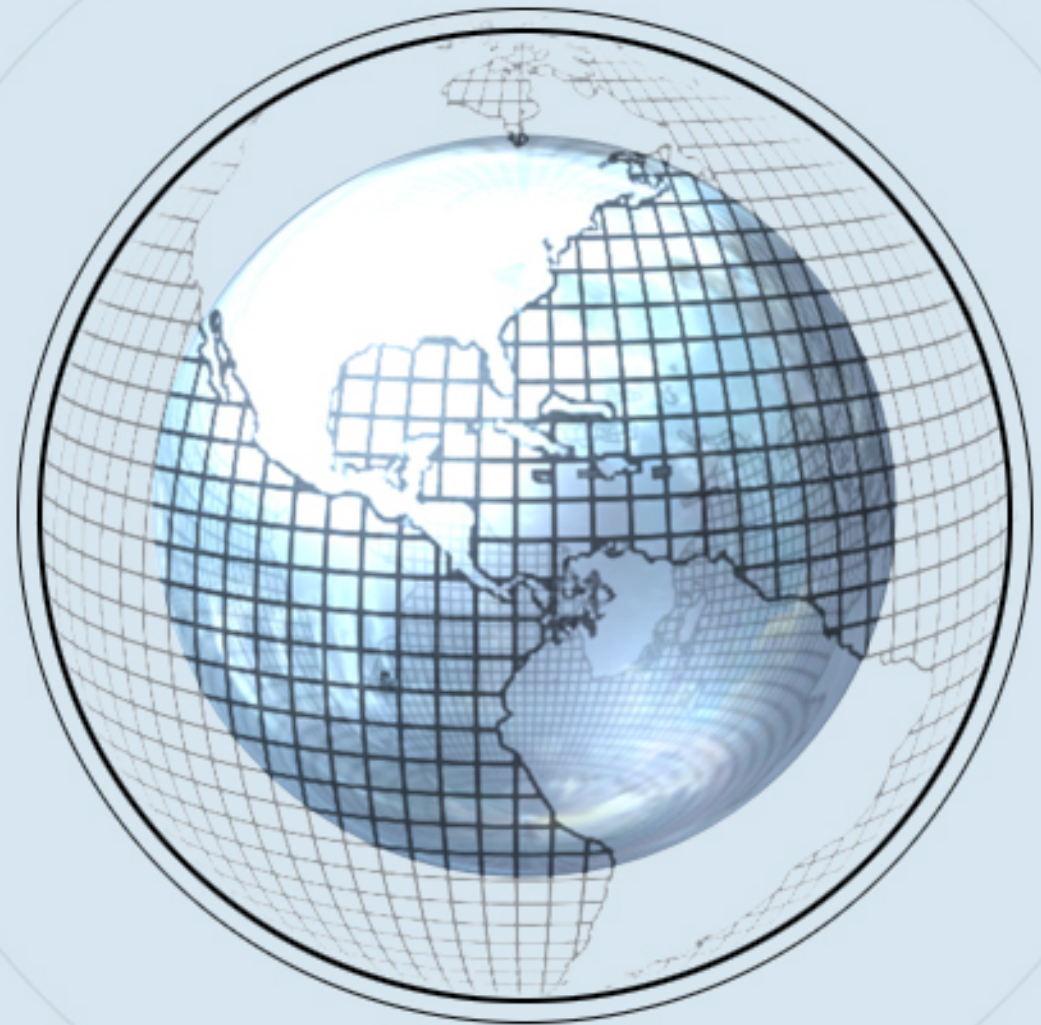


# Presentation Overview

- **Gives additional information on key issues and companies that may be able to consume RMP or RMP based pulp**
- **This Power Point Presentation goes together with MicroSoft Excel spreadsheets provided as deliverables for the project**
- **Detailed information about the papermaking assets and their use/potential use of RMP or RMP pulp can be found in the affiliated Excel spreadsheets**



# Background



# Paper Making Capacity in Florida



<http://bit.ly/FLPaperMills>



# **Paper Making Capacity in Florida - Continued**

- **There are ten (10) mainline paper mills in Florida plus one (1) molded fiber operation, one (1) ceiling tile manufacturing plant, and one (1) insulation manufacturing plant**
- **The 10 paper mills consist of:**
  - **Four tissue mills:**
    - **Resolute, Sanford, Florida**
    - **Resolute, Hialeah, Florida**
    - **Georgia-Pacific, Palatka, Florida**
    - **Sofidel, Haines City, Florida**



# Paper Making Capacity in Florida - Continued

- **Three specialty pulp mills (fluff and dissolving pulp):**
  - Zellwin Farms Company, Zellwood, Florida
  - Armstrong World Industries, Pensacola, Florida
  - US GreenFiber, LLC, Tampa, Florida
  
- **Four board mills:**
  - West Rock, Fernandina Beach, Florida
  - West Rock, Panama City, Florida
  - West Rock, Jacksonville, Florida
  - International Paper, Cantonment, Florida



# Paper Making Capacity in Florida - Continued

- **Seven of the mills are based solely on virgin fiber:**
  - Resolute, Sanford, Florida
  - Georgia-Pacific, Palatka, Florida
  - Sofidel, Haines City, Florida
  - West Rock, Panama City, Florida
  - International Paper, Cantonment, Florida
  - Rayonier – Fernandina Beach, Florida
  - GP Cellulose (Georgia-Pacific) – Perry, Florida
- **Two of the board mills use recycled fiber:**
  - West Rock, Fernandina Beach, Florida
  - West Rock, Jacksonville, Florida





# **Paper Making Capacity in Florida - Continued**

- One tissue mill is based on recycled fiber pulp:
  - Resolute – Hialeah, Florida****
- The molded fiber, ceiling tile, insulation plants are based on recovered paper:
  - Zellwin Industries, Zellwood, Florida**
  - Armstrong World Industries, Pensacola, Florida**
  - US GreenFiber, LLC, Tampa, Florida****



# RMP Composition Trends

- **Generally 20 to 35% Old News Papers (ONP) – Declining – probably getting down to 10 – 15% ultimately**
- **< 5% to 30 - 40% Old Corrugated Containers (OCC) – Increasing – two types: low OCC version, where screens at the Material Recovery Facility (MRF) pull out as much OCC as possible (currently many MRF's approach) and high OCC version with little to no OCC removed – brown rich, board grade RMP**
- **10 to 20% Freesheet – mail, office papers – Declining**
- **10 to 15% coated and uncoated mechanical papers – Declining**
- **20% other paperboards/boxboards, coated and uncoated – Steady to increasing**
- **2 to 10+% Prohibitives (non-paper contaminants) – Averaging 5+% Declining, industry targeting to get to 2%. If making RMP pulp in the United States, probably less emphasis is needed on removing prohibitives at the MRF, do it in the wet phase/stock prep at the mill.**
- **The prohibitives level in RMP is a major stumbling block to increased use of RMP by the paper industry**



# **Toweling Produced in Florida**

- **Florida has significant capacity to produce bleached (white) tissue/towel products – four mills:**
  - **Three mills are based solely on virgin fiber:**
    - **Resolute, Sanford, Florida**
    - **Georgia-Pacific, Palatka, Florida**
    - **Sofidel, Haines City, Florida**
  - **One mill uses recycled fiber pulp produced by the company outside of Florida:**
    - **Resolute – Hialeah, Florida**
- **There is no brown towel making capacity in Florida**
- **Brown towel can be partially based on Mixed Paper (MP)**
- **Nearest brown towel producing mill is Kimberly-Clark in Mobile, Alabama**

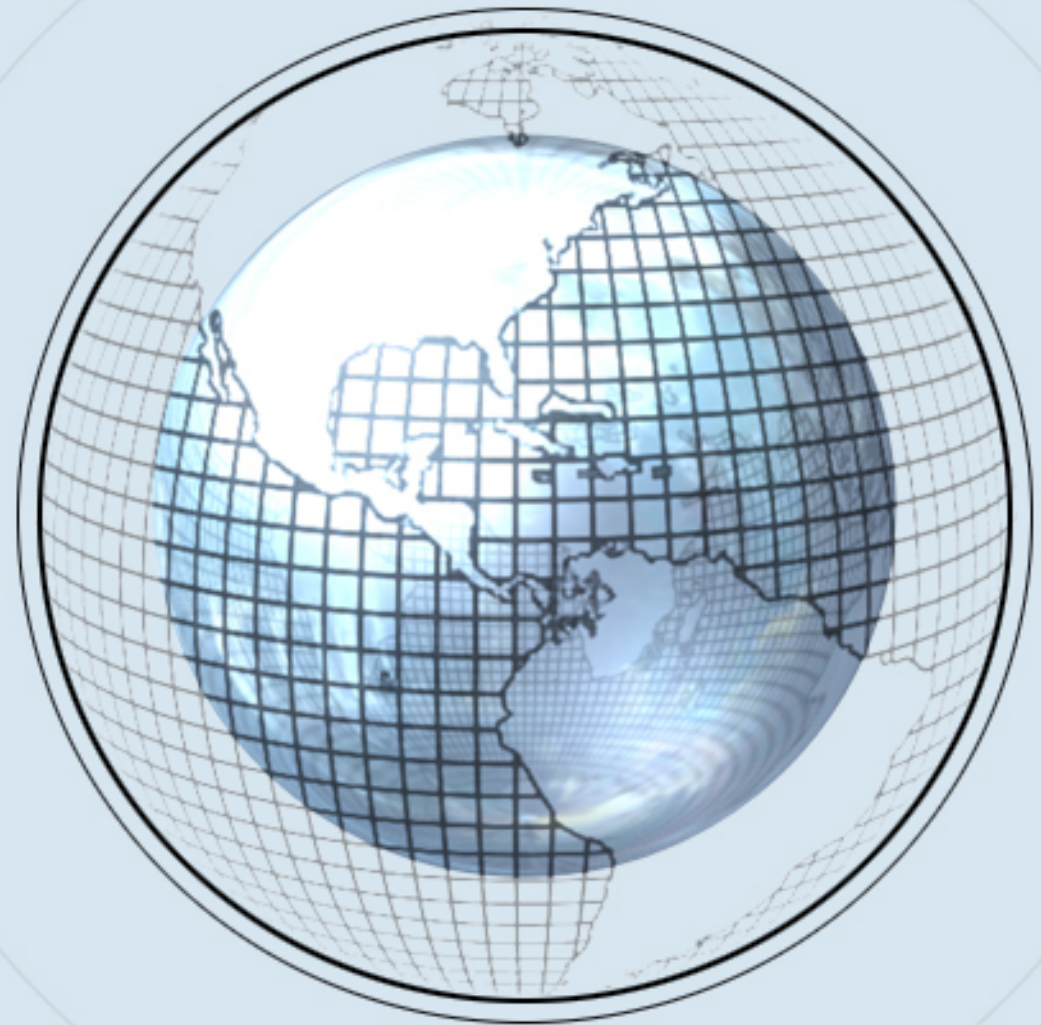


# Mexican Market

- **Their paper industry is highly based on recycled fiber**
- **The country is not self sufficient in Recovered Paper (RCP) supply and imports recovered paper from the United States at high delivered costs**
- **Not equipped at this time to use much RMP from the United States – mill cleaning system limitations**
- **Potential market for Florida RMP – barging from the ports**
- **Florida RMP use into Mexico is beyond the scope of this project, but very little RCP currently moves from Florida to Mexico**
- **Potential for use of RMP imported from Florida should be examined**
- **Possible market for RMP pulp**



# Company Specific Information



# WestRock

- **The largest paper producer in Florida:**
  - Three large containerboard mills in the state, one in middle Georgia
    - Two in Jacksonville, Florida area – one is 100% recycled fiber, the other partial recycle fiber
    - One virgin fiber based mill in Panama City, Florida
    - A large 100% recycle containerboard mill in Dublin, Georgia which secures part of its recovered paper supply from Florida
- **Current small user of RMP at their Jacksonville, Florida and Dublin, Georgia mills**
- **Emphasized quality of RMP is important to their interest in using RMP:**
  - Prohibitives less than 2 – 3%
  - OCC content higher than 25%
  - Minimum newsprint content – short mechanical fibers are almost all lost in making containerboard





# Zellwin Industries

- **Produces egg carton/egg related molded fiber products – 11,000 tons/year**
- **Located in Zellwood, Florida (near Apopka): Uses Separated Residential Paper and News [(SRPN) (formerly #8 ONP)]**
- **Has considered expansion to other products (protective packaging), but capital for expansion for their existing site would be significant and the owners are not inclined to expand**
- **Noted it is expensive to ship to products out of Florida during agricultural season – common transportation problem with all goods going out of the state**
- **RMP fiber composition not optimum for their current products – not enough newsprint content. Needs low OCC content.**
- **Biggest challenge the company faces is the lack of competition and high cost for natural gas in their market. Energy is a key cost for drying their product.**

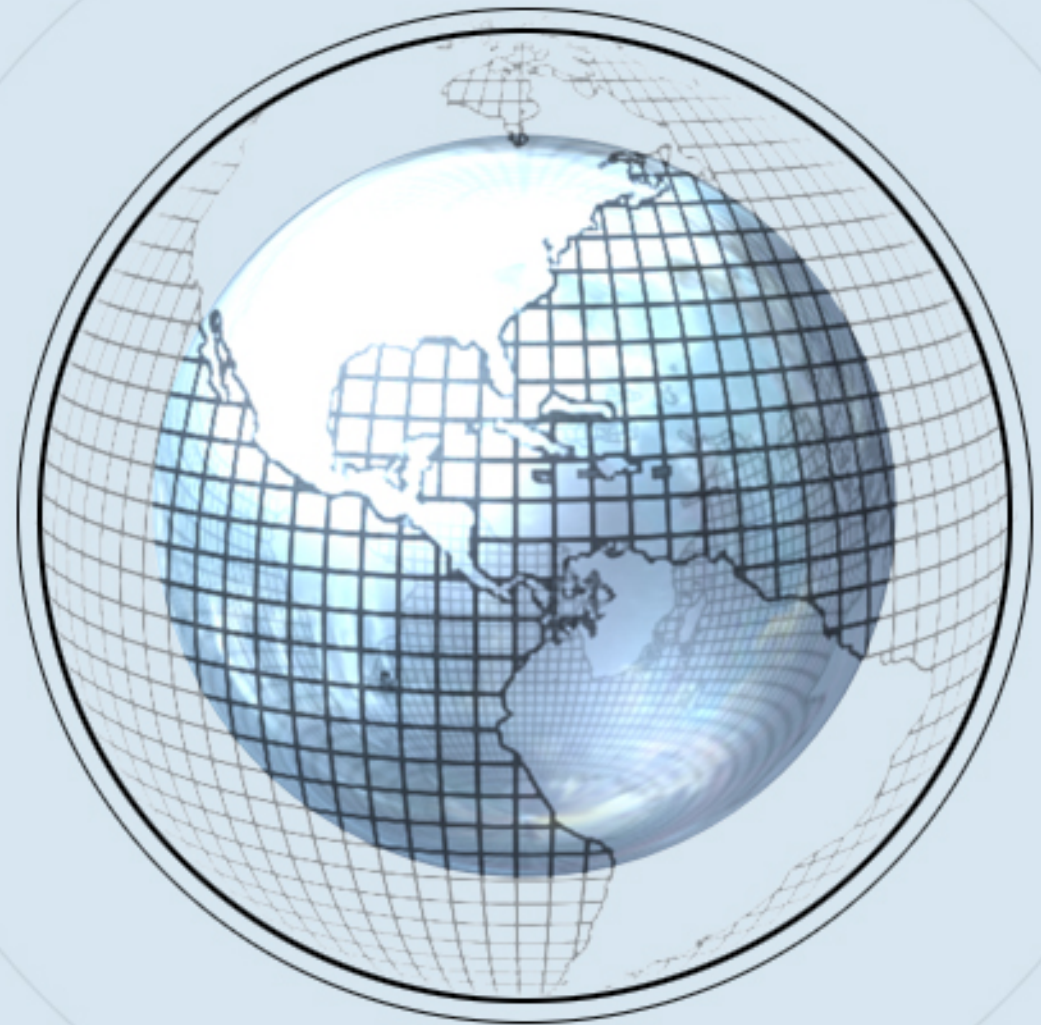


# **Armstrong World Industries**

- **Largest United States producer of acoustical ceiling tile**
- **Has a plants in Pensacola (small) and Macon, Georgia (largest ceiling tile plant in the world)**
- **Recovered paper is part of the recipe to produce ceiling tiles**
- **Uses very clean old newspaper grades and directory type printer scrap**
- **Their recovered paper raw materials are going away and delivered prices are high and increasing**
- **Are interested in using RMP pulp:**
  - **Fiber composition desired – higher newsprint content than containerboard sector**
- **The acoustical ceiling tile business however is flat with no growth projected**



# Mixed Paper (MP) – Pulping Units



# **RMP/MP Pulping Units**

- **Demand/selling the pulp**
- **Pulp Production:**
  - **MP Bale Handling**
  - **Pulper – Drum or Continuous**
  - **Stock Preparation – pulping, detrashing, screening, and cleaning**
  - **Pulp machine – like a paper machine but makes a thicker product than a paper or board machine**
  - **Dewatering/drying the pulp – three options: Wet Lap, Air/Flash dried, or, Press & Thru-Air Dryer.**
  - Baling/Roll Pulp and Packaging**
- **MP raw material – high or low OCC versions**



# Drying the Pulp

- **Recycle pulp needs to be dewatered or dried for two reasons:**
  - Decreases shipping costs
  - Spoilage due to bacteria growth – bactericides are used
- **An expensive part of the process:**
  - Needs to be dried to ship to users
  - Then gets re-wetted for use
- **The more dried the pulp needs to be, the costlier it is to produce (presented in order of increasing cost):**
  - Slush pulp – no dewatering/drying: use at a paper mill only – fiber slurry, can not be shipped (it's really what is done at existing mills)
  - Wet lap – dewatering through pressing: suitable for in/nearby state markets, bactericides used in this pulp – 45 – 50% water
  - Air/Flash dried – suitable for Mexico? – 15% water
  - Press & Thru-air Dry - suitable for China – 10% water



# **Mixed Paper Pulp Units – Potential Users of the Pulp**

- **Domestic smaller specialty product plants/mills:**
  - Can't afford extensive stock prep systems to use MP
  - Their current supplies of RCP are very expensive and supply volumes are declining (newsprint/ONP and printer grades)
  - Molded fiber, ceiling tiles, some specialty paperboard (e.g. gypsum paperboard), possibly some toweling
- **Offshore, export to China and Mexico:**
  - Cost to deliver dried pulp to China or Mexico – may have to have only about 10 – 15% moisture content.
  - Will Chinese mills build MP pulp units themselves:
    - In the United States? They are looking at possibilities
    - Already activity by them in Southeast Asia
    - Nine Dragons purchase of two United States mills
  - Mexico – possible market





# Potential RMP Pulp Users In/Near Florida

- **In state:**
  - **Armstrong World Industries, Pensacola, Florida (Strong Potential)**
  - **Zellwin Industries, Zellwood, Florida (Good Potential)**
  - **US GreenFiber, LLC, Tampa, Florida (Fair Potential)**
- **Out of state:**
  - **Armstrong World Industries – Macon, Georgia**
  - **Pactiv (molded fiber products, egg cartons) – Macon, Georgia**
- **Total potential RMP pulp use in/near Florida – fairly small:**
  - **Maximum ~70,000 tons/year or 200+ tons/day**
  - **Too small to support a stand alone RMP pulping unit on its own in the state**
- **Export of RMP pulp to Mexico & China:**
  - **Necessary to support an RMP pulp unit**



# **Mixed Paper Pulping System Costs**

## **Ballpark Estimate (+/- 30%) for a 500 ton/day Unit**

- **Twin wire/wet lap pulp – 45% to 50% dry (domestic use only)**
  - \$9.5 million – equipment only
  - Does not include any land or building costs – very site specific
  - Engineering, design and installation will raise the cost 3 – 4 fold - \$22 - \$38 million
- **Air dried/flash dryer – 85% dry (may not be suitable for shipment to China, but probably OK for Mexico)**
  - \$15 million – equipment only
  - No land or building costs
  - Installed cost - \$45 - \$60 million
- **Press & Thru-air dryer – 90% dry**
  - \$19 million – equipment only
  - No land or building costs
  - Installed cost - \$57 - \$76 million

# **Mixed Paper Pulping System Costs**

## **Ballpark Estimate for a 1,250 ton/day Unit**

- **Twin wire/wet lap pulp**
  - \$16 million – equipment only
  - Installed cost - \$48 - \$64 million
- **Air dried/flash dryer**
  - \$25 million – equipment only
  - Installed cost - \$75 - \$100 million
- **Press & Thru-air dryer**
  - \$ 32 million – equipment only
  - Installed cost - \$ 95 - \$125 million

# Size of RMP Pulping Units

- **Pulping Units are capital intensive operations (not very labor intensive)**
- **Economics are very sensitive to scale of operations**
- **Paper industry speaks in terms of equipment \$ per installed daily ton of production**
- **Example - stock prep equipment (only)**
  - 150 TPD - \$11,300 per daily ton
  - 500 TPD - \$7,600 per daily ton
  - 1,250 TPD - \$5,000 per daily ton

# **RMP Pulp Unit Yields/Contaminants**

- **Yield is very important for system economics**
- **Varies with prohibitives level in MP:**
  - **At 2% Prohibitives ~ 85% Yield**
  - **At 5% Prohibitives ~ 80% Yield**
  - **For comparison purposes, yield on clean OCC at a mill ~ 90%**
- **Contaminant levels in the pulp produced is somewhat dependent on incoming MP prohibitives level**
- **Glass contamination is very detrimental to pulping equipment**



# **Candidate Companies for Building a RMP Pulp Unit**

- **Chinese mill companies and others are looking at multiple locations in the United States. Primary focus has been on the west coast**
- **Existing paper company**
- **Paper industry project developers**
- **Large MRF operators vertically integrating**



# Siting a RMP Pulp Mill

- **Economic size of a unit:**
  - Minimum – 500 tons/day
  - The larger, the better
  - 1,250 tons/day – Good size
- **Market for the pulp:**
  - Not enough use for the pulp in or near Florida for economic size recycle pulp mill – but this pulp doesn't have to be dried: wet lap OK, therefore lower cost
  - Pulp must be marketed to China and Mexico – needs to be dried
- **Siting/location of a recycle pulp mill:**
  - Existing mill site – best:
    - Could use some of the output in slush form in one of their existing mills
    - Portion of pulp used at an exiting mill would not have to be dried
  - Brownfield site?



# Conclusions

- **There are real, but limited opportunities for increased use of Mixed Paper at existing paper mills in Florida**
- **There is some, but limited consumption potential for RMP pulp in Florida or nearby states**
- **Best possibility is for increased RMP use or an RMP pulping unit at an existing mill site:**
  - **Slush pulp for use on site**
  - **Wet lap for close in RMP pulp users**
  - **Dried RMP pulp for export (China and Mexico)**
  - **One of the existing mill sites would be the most obvious locations for a pulping operation**
- **Molded fiber products would be good potential users of either RMP or RMP pulp**





# Conclusions - Continued

- **Brown towel production could be a user of RMP (although primarily based on OCC). There is a movement away from white towel/napkin to brown in the commercial sector (restaurants & offices) as part of a sustainability efforts.**
- **The most frequently mentioned barrier to the use of more RMP is the quality, especially the amount of prohibitives in it (non-paper contaminants). The lower the prohibitives, the better, but mills realize there is a lower practical level and they are used to dealing with contaminants. 2 – 3% prohibitives would be an acceptable level, which is far lower than the typical 5 – 10+%**



# **What Can the State of Florida Do to Encourage More Demand for RMP**

- **Consider incentives for equipment installations that are related to the use of more RMP**
- **Consider purchasing preferences for brown towel use in the state**
- **Actively pursue companies that are potential users of RMP**
- **Create a plan to assist local government collection programs and MRF operations produce higher quality RMP – primarily to get to lower prohibitive levels**



# Recommendations

- **Open direct discussions with existing mill companies in the state on their positions on use of RMP generated in Florida. WestRock is an obvious candidate for this.**
- **Open discussions with Chinese paper mill companies about their interest in siting an RMP based pulp unit in Florida**
- **Explore the potential for RMP and RMP pulp use in Mexico, which can be supplied by existing barge routes between the Florida ports (both east coast and Tampa) and Mexico**



# Recommendations - Continued

- **Prepare an approach to attract more molded fiber plant capacity into Florida – this sector is growing rapidly and some of the in-state demand for products is being supplied from Mexico. This should include discussions with Zellwin.**
- **Examine ways to increase the use of brown toweling in the state**
- **Discuss brown towel production with the existing tissue mills in the state**



# Recommendations - Continued

- **Assign an FDEP waste reduction program staff to State's existing economic development agency(ies) to help attract more manufacturers of recyclable materials in Florida and recommend Legislative actions for assisting existing recycling businesses to create higher demand for recyclables.**



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Appendix B:  
Facility Summary Sheets



## **Florida Operations Examined for Mixed Paper and RMP Pulp Use Analysis**

**Company:**

West Rock - Fernandina

**City:**

Fernandina Beach

**Contact Info:**

Kris Waldhauser (corporate - Norcross, GA)

[kris.waldhauser@westrock.com](mailto:kris.waldhauser@westrock.com)

865-740-6184

**Primary Mill Product:**

Linerboard

**Normal Production Capacity:**

925,000 tons

**Current use of MP**

None

**RMP vs MP**

N/A

**Trialing to Use MP with No Investment:**

No

**Investment or Equipment Installation Planned?**

No plans at this time

**Ultimate Potential to Use MP:**

Unknown

**Barriers to Use MP or More MP:**

High quality linerboard product limits interest in using RMP

**Potential Use of RMP Pulp:**

Not a Candidate

**Comments:**

Nominally 80% virgin fiber, 20% OCC

## **Florida Operations Examined for Mixed Paper and RMP Pulp Use Analysis**

**Company:**

West Rock - Panama City

**City:**

Panama City

**Contact Info:**

Kris Waldhauser (corporate - Norcross, GA)

[kris.waldhauser@westrock.com](mailto:kris.waldhauser@westrock.com)

865-740-6184

**Primary Mill Product:**

Linerboard & a variety of primarily bleached pulps

**Normal Production Capacity:**

615,000 tons

**Current use of MP**

None

**RMP vs MP**

N/A

**Trialing to Use MP with No Investment:**

No

**Investment or Equipment Installation Planned?**

None

**Ultimate Potential to Use MP:**

0

**Barriers to Use MP or More MP:**

High quality linerboard produced at this mill

**Potential Use of RMP Pulp:**

Not a Candidate

**Comments:**

100% virgin fiber based, linerboard production is 335,000 tons

## **Florida Operations Examined for Mixed Paper and RMP Pulp Use Analysis**

**Company:**

West Rock - Seminole

**City:**

Jacksonville

**Contact Info:**

Kris Waldhauser (corporate - Norcross, GA)

[kris.waldhauser@westrock.com](mailto:kris.waldhauser@westrock.com)

865-740-6184

**Primary Mill Product:**

Corrugated Medium and Linerboard

**Normal Production Capacity:**

600,000 tons

**Current use of MP**

Some

**RMP vs MP**

Some is RMP

**Trialing to Use MP with No Investment:**

Yes

**Investment or Equipment Installation Planned?**

No plans at this time

**Ultimate Potential to Use MP:**

Unknown

**Barriers to Use MP or More MP:**

RMP quality is a key factor

**Potential Use of RMP Pulp:**

Not a Candidate

**Comments:**

100% recycled fiber based - mostly OCC, small amounts of DLK, & Mixed Paper

## **Florida Operations Examined for Mixed Paper and RMP Pulp Use Analysis**

**Company:**

International Paper - Pensacola

**City:**

Cantonment

**Contact Info:**

Walter Shorter (corporate - Memphis, TN)  
[walter.shorter@ipaper.com](mailto:walter.shorter@ipaper.com)

**Primary Mill Product:**

Linerboard and bleached fluff pulp

**Normal Production Capacity:**

700,000 tons

**Current use of MP**

None

**RMP vs MP**

N/A

**Trialing to Use MP with No Investment:**

No

**Investment or Equipment Installation Planned?**

None



**Ultimate Potential to Use MP:**

Unknown

**Barriers to Use MP or More MP:**

Company is not interested in using any Mixed Paper

**Potential Use of RMP Pulp:**

Not a Candidate

**Comments:**

100% virgin fiber based, linerboard production is 535,000 tons.

## **Florida Operations Examined for Mixed Paper and RMP Pulp Use Analysis**

**Company:**

Armstrong World Industries

**City:**

Pensacola

**Contact Info:**

Mick Schultz (corporate - Lancaster, PA)

[MCSchulz@armstrongceilings.com](mailto:MCSchulz@armstrongceilings.com)

717 396-3005

**Primary Mill Product:**

Ceiling tiles

**Normal Production Capacity:**

2,500 tons, Paper Portion of tiles

**Current use of MP**

None

**RMP vs MP**

N/A

**Trialing to Use MP with No Investment:**

No

**Investment or Equipment Installation Planned?**

None

**Ultimate Potential to Use MP:**

0

**Barriers to Use MP or More MP:**

Plant is too small to use Mixed Paper itself

**Potential Use of RMP Pulp:**

Good candidate

**Comments:**

Based on mechanical fiber printer grades that are disappearing

## **Florida Operations Examined for Mixed Paper and RMP Pulp Use Analysis**

**Company:**

Zelwin Farms Company

**City:**

Zellwood

**Contact Info:**

Ray Trent (at the plant/HQ)  
407 886-1891

**Primary Mill Product:**

Molded fiber egg products

**Normal Production Capacity:**

11,000 tons

**Current use of MP**

None

**RMP vs MP**

N/A

**Trialing to Use MP with No Investment:**

No

**Investment or Equipment Installation Planned?**

Not at this time

**Ultimate Potential to Use MP:**

5,000 tons

**Barriers to Use MP or More MP:**

Plant is small so capital investment to use Mixed Paper could be prohibitive, but not out of the question. Fiber composition of RMP would pose some technical challenges, they need high ONP

**Potential Use of RMP Pulp:**

Fair candidate

**Comments:**

Uses 100% post consumer ONP - #56 SRPN.  
As Long as they can get an adequate supply of SRPN,  
alternatives such as Mixed Paper look less attractive  
SRPN has less than 5% prohibitives and 2 - 3 % OCC.

## **Florida Operations Examined for Mixed Paper and RMP Pulp Use Analysis**

**Company:**

US Greenfiber, LLC

**City:**

Tampa

**Contact Info:**

Samantha  
(813) 622-8551

**Primary Mill Product:**

Cellulose Insulation Manufacturer

**Normal Production Capacity:**

24,000 tons

**Current use of MP**

None

**RMP vs MP**

N/A

**Trialing to Use MP with No Investment:**

No

**Investment or Equipment Installation Planned?**

None

**Ultimate Potential to Use MP:**

Unknown

**Barriers to Use MP or More MP:**

Plant is too small to use Mixed Paper itself

**Potential Use of RMP Pulp:**

Good candidate

**Comments:**

Based on mechanical fiber printer grades that are disappearing

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**Florida Operations Examined for Mixed Paper and RMP Pulp Use Analysis****Notes:**

There are ten mainline paper mills in FL plus one molded fiber operation, one ceiling tile plant and one insulation manufacturer.

Only those facilities that have the potential to use Mixed Paper or RMP pulp are listed.

Four of the mills in FL are tissue mills - all produce white/bleached product, there appears to be no capacity in the state to produce brown toweling which might consume Mixed Paper or possibly RMP pulp



## Operations Examined for RMP Pulp Use Near Florida

**Company:**

Pactiv

**City & State:**

Macon, GA

**Contact Info:**

James Burr (corporate, located in Macon, GA - HQ in Lake Forest, IL)  
[jburr@pactiv.com](mailto:jburr@pactiv.com)  
478-781-3367

**Primary Product:**

Molded Fiber - egg cartons, etc.

**Nominal Production Capacity:**

32,000 tons

**Potential Use of RMP Pulp:**

Good Candidate - 32,000 tons

**Comments:**

Currently runs on very clean ONP grades  
Examining improvements to stock prep system to use lower grades  
Could use RMP pulp with as much as 1 - 2% prohibitive content

## **Operations Examined for RMP Pulp Use Near Florida**

**Company:**

Armstrong World Industries

**City & State:**

Macon, GA

**Contact Info:**

Mick Schultz (corporate - Lancaster, PA)

[MCSchulz@armstrongceilings.com](mailto:MCSchulz@armstrongceilings.com)

717 396-3005

**Primary Product:**

Ceiling tiles

**Nominal Production Capacity:**

27,000 tons, Paper Portion of tiles

**Potential Use of RMP Pulp:**

Good Candidate - 25,000 tons

**Comments:**

Currently runs on mechanical fiber printer scrap and #9 ONP