

Roanoke Electric Steel Corporation

Operating Procedure

Title: Receiving and Inspection of Scrap

Page 1 of 3

ATTACHMENT 1 - GENERAL SPECIFICATIONS

The following specifications apply to all of the scrap purchased by Roanoke Electric Steel Corporation (RES). All material is to be suitable and acceptable to RES based on inspection.

1. All grades of scrap shall not contain significant amounts of high-carbon or high-alloy steel (e.g. alloy steel, chrome plated steel, stainless steel, cast iron material, high manganese scrap, high silicon scrap); nonferrous metals (e.g. aluminum, copper, brass, lead,); non-metallics (e.g. dirt, wood, concrete, insulation, rubber, plastic, cloth, paper, oil, grease, or any other non metallic materials); or any other scrap deemed detrimental to our steel making processes.
2. Material containing lead will not be accepted (e.g. batteries, lead-based paints, gas tanks, metal guttering, other terne plated material, mufflers, tail pipes, motor blocks, wheel weights, babbitt, radiators, lead joints).
3. Loads which have potentially explosive material (e.g. tanks, cylinders, aerosol cans, shocks, transmissions, torque converters, air conditioning units, gear boxes, metal guttering radiators, electric motors, any item likely to hold oil) will not be accepted.
4. Sealed units may be included in shipments only if the ends are cut open or they have a minimum of two large holes in them. These items should be situated in the load such that they are visible for inspection at RES.
5. In the specifications, unless noted otherwise, the following maximum chemistry limits will apply.

0.45% max Cu (copper)	0.06% max Mo (molybdenum)
0.20% max Cr (chromium)	0.50% max Si (silicon)
1.65% max Mn (manganese)	0.05% max P (phosphorous)
0.25% max Ni (nickel)	0.05% max S (sulfur)
0.03% max Sn (tin)	
6. Material bought as "special low residual" scrap must not exceed the following maximum chemistry limits.

0.10% max Cu	0.02% max Mo	0.08% max Cr
0.25% max Si	0.90% max Mn	0.015% max P
0.08% max Ni	0.01% max S	0.01% max Sn
7. A car must not be top dressed with material that does not constitute a major portion of the material in the car and precludes visual inspection of the car.
8. Generally, any cast iron in excess of one (1) percent by weight of the material will constitute rejectibility.
9. All material must be magnet loaded.
10. Any exceptions to these specifications must be approved by RES. On normal grades, RES may, at times, test other materials that may exceed the above chemistry on controlled usage.

Roanoke Electric Steel Corporation

Operating Procedure

Title: Receiving and Inspection of Scrap

Page 2 of 3

PLATE & STRUCTURAL

Clean steel plate and structural shapes, 3/16" minimum thickness, 8" maximum thickness, cut to 5' x 2' maximum. No unsplit pipe and no galvanized material.

#1 HEAVY MELT

Clean steel scrap, 3/16" minimum thickness, 8" maximum thickness, 5' x 2' maximum. 1% maximum cast iron by weight. Heavy walled pipe is acceptable; over 4" must be split. Dies by customer approval only. No automotive scrap, gears, cables, chains, or coated material.

RAILROAD RAIL & OTM

Cropped rail, 80#/yd and heavier, standard section. Cut to 5' maximum length. Rail 80#/yd and less, cut to 3' maximum length. All OTM must be 3' and under.

#1 BUSHELING

Clean steel scrap not exceeding 36" in any dimension, 20 gauge minimum thickness. Free of coated metal and electrical steel containing over 0.5% Si.

GALVANIZED #1 BUSHELING

Clean steel scrap not exceeding 36" in any dimension, 20 gauge minimum thickness. Free of electrical steel containing over 0.5% Si.

#1 RAILROAD STEEL

Clean steel railroad car scrap 3/16" minimum thickness cut to 5' x 2' maximum size. Should include cut bolsters, truck sides and frames. Maximum of 20% car sides by weight.

ELECTRIC FURNACE STEEL

This grade should be considered as a mixture of #1 heavy melting, #2 heavy melting, and plate and structural. Should not exceed 50% #2 steel by weight. Refer to individual grade specifications for acceptable material. Maximum size of 36" x 24."

#1 BUNDLES

Steel sheet scrap, clippings, or skeleton scrap compressed into a bundle weighing not less than 75 lbs/ft³. May include chemically detinned material and 10% maximum galvanized material. No dimension to exceed 48" and no two dimensions to exceed 24". Example: 48" x 24" x 24" is acceptable, 36" x 36" x 36" is not acceptable.

GALVANIZED #1 BUNDLES

Steel sheet scrap, clippings or skeleton scrap compressed into a bundle weighing not less than 75 lbt/ft³. May include chemically detinned material. No dimension to exceed 48" and no two dimensions to exceed 24". No heavy galvanized material will be accepted, i.e., 1.5% zinc by weight maximum.

Roanoke Electric Steel Corporation

Operating Procedure

Title: Receiving and Inspection of Scrap

Page 3 of 3

MANDREL AND COIL BUNDLES

Steel sheet scrap, clippings or skeleton scrap tightly wound with a minimum of three ties. Must be suitable for magnetic handling. Maximum size 36" in any dimension. May include wire bundles if properly prepared. Must have minimum density of 75 lbs/ft³.

SHREDDED

Homogenous steel scrap magnetically separated originating from automobiles, unprepared #1 and #2 miscellaneous baling and sheet iron. Minimum density of 55#/ft³. Maximum of 5% of the material exceeding 10", no material exceeding 16". May not include tin cans, stampings, punchings, or incinerator scrap. A maximum of 1% cast iron by weight.

NO. 2 BUNDLES

Old black and galvanized steel scrap compressed into a bundle weighing not less than 75 lb/ft³. No dimension to exceed 48" and no two dimensions to exceed 24". May not exceed 40% galvanized material or include tin, lead coated, or vitreous enameled material. Motor blocks, transmissions, electrical motors, shock absorbers, tin cans, electrical specifications is not acceptable. Must be free of non-metallics, i.e., rubber, wood, upholstery, and plastic; with the exception of a maximum of 10% unstripped appliances.

#2 HEAVY MELTING

Steel scrap 1/8" minimum thickness, 8" maximum thickness. 36" × 24" maximum size. Can be black or a maximum of 25% galvanized. May not include lead or tin coated or vitreous enameled material. A maximum of eight uncut car wheels per load with weights removed. May include automotive scrap if properly prepared; rear ends, torque converters, and transmissions must all be cut. Powder metallurgy parts and non-metallics are not acceptable. Cast iron not to exceed 1% by weight.

SHEET SLABS

Cut sheet steel slabs 36" × 18" maximum. May not include automotive slabs.

TURNINGS

Clean steel machine shop and/or short shoveling turnings. Must be free flowing and suitable for magnetic handling, i.e., may not include springy, bushy, tangled, or matted material. Cast iron borings, nonferrous, excessive oil and scale, badly rusted or corroded is not acceptable. Must have minimum of 40#/ft³.

FLASHINGS

Steel flashings 1/8" minimum thickness, 3' maximum size. Must be suitable for magnetic handling, i.e., non-tangling. Minimum density of 50#/ft³.